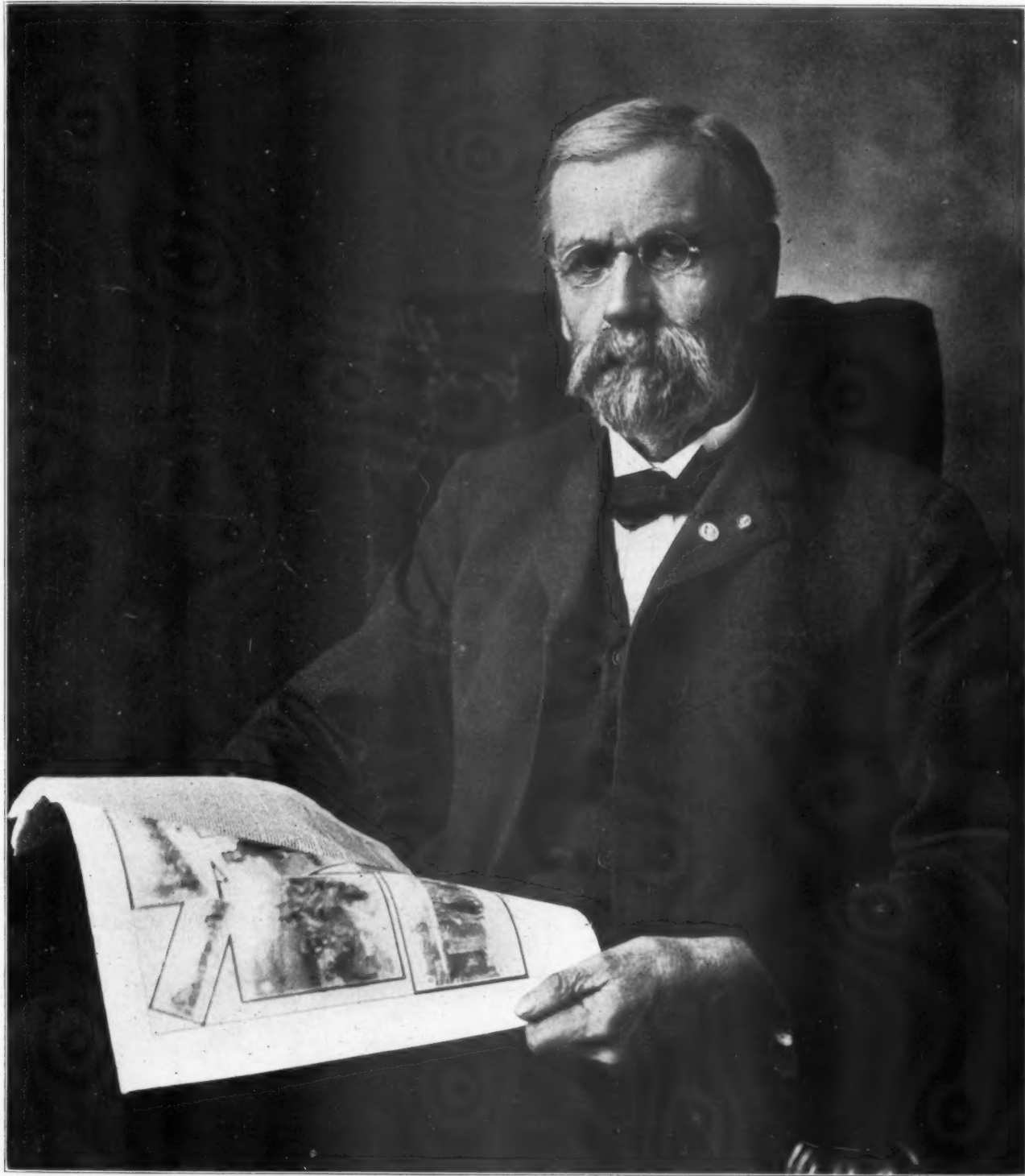


# AMERICAN BEE JOURNAL

MAY, 1917



Hon. Eugene Secor, the Poet of American Beekeeping

## ARCHDEKIN'S FINE ITALIAN QUEENS AND COMBLESS BEES

April, May, June queens warranted purely mated, \$1.00 each; six for \$5.00; per doz. \$50.00. Bees per lb. \$1.25. With untested queen, \$2.00 per lb. I have originated a pkg. light but strong; saves you bees and express. My guarantee is prompt shipment, safe arrival, perfect satisfaction. No disease. Small deposit books your order.

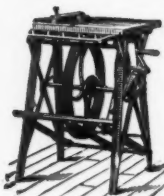
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We handle the finest line of Bee Supplies. Send for our 68 page catalog. Our prices will interest you.

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Read what J. I. Parent of Chariton, N. Y., says: "We cut with one of your Combined Machines last winter 50 chaff hives with 7-in. cap, 100 honey-racks, 500 frames, and a great deal of other work. This winter we have a double amount of hives, etc., to make with this saw. It will do all you say of it." Catalog & price-list free

W. F. & JOHN BARNES  
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## THE FAMOUS DAVIS GOLDENS

And get big yields from gentle bees. Write for circular and Price list.

BEN G. DAVIS  
Spring Hill, Tennessee

## POULTRY, FRUIT, BEE PAPER COMBINATION \$1.50

Poultry and Fruit are allied pursuits for the beekeeper. Here is a special combination of three papers which gives excellent reading at a low cost:

The Fruit Grower..... .50  
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American Bee Journal..... \$1.00

Our price for all three for one year is only \$1.50. Or if you want two poultry papers, add 25c to the above offer and get your choice of the following one year:

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Send all orders to

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### Canadian and United States Trade

We are now booking deliveries in June and July at the following prices, viz.:

FROM PENN. MISS.					FROM TORONTO, ONTARIO.				
Prices 1 and over	1	6	12	25 to 100	1	6	12	25 to 100	
Untested.....	\$ .85	\$1.50	\$8.00	\$.05 each	\$1.00	\$4.80	\$0.25	\$.75 each	
Warranted.....	1.10	5.00	9.50	.75 "	1.45	5.80	10.75	.85 "	
Tested.....	1.50	7.50	13.50	1.05 "	1.75	7.80	14.75	1.15 "	
Breeders.....	3.00	to \$10.00 each.			3.00	to \$10.00 each.			

### POUND PACKAGES WITH UNTESTED QUEENS

FROM PENN. MISS.				FROM TORONTO, ONTARIO			
	1 to 5	6 to 25	over		1 to 5	6 to 25	50 over
	each	each	each		each	each	each
1-pound and Queen.....	\$2.25	\$2.00	\$1.00		\$1.00	\$2.75	\$2.65
2-pound and Queen.....	3.00	2.75	2.65		4.50	4.25	4.00

Prices on full colonies and nuclei quoted on request.

We supply THE ROOT CANADIAN HOUSE, 51 WOLSELEY ST., TORONTO, ONTARIO, CANADA, with large shipments almost daily during the above months, frequently moving almost a car of packages to them at a time. This is the most successful way of serving Canadian trade. This firm has our entire Agency for the Dominion, and all Canadian business should be addressed to them unless you wish shipments made direct from Penn. Miss., address us.

At the time of booking order, remit 10 percent as a form of good faith on your part with balance to be remitted a few days prior to date of shipment. We move orders promptly. Our references, any Mercantile Agency, The A. I. Root Co., or American Bee Journal.

When you deal with us it means satisfaction. Health Certificates furnished with each and every shipment of bees. This assures you that no delays will take place. Safe delivery guaranteed. If interested in bee-hive material, our catalog will be sent on request.

**THE PENN COMPANY, PENN, MISS., U. S. A.**

## Bee Supply Department

Orders shipped day received

Our warerooms are loaded with Lewis Beeware

Everything at factory prices

Send for catalog

## Wax Rendering Department

We do perfect wax rendering. It will pay every Beekeeper to gather up all his old combs and cappings and ship to us. We charge 5c a pound for the wax we render and pay the highest cash or trade price.

## THE FRED W. MUTH COMPANY

(The firm the Busy Bees work for)

204 Walnut Street,

CINCINNATI OHIO

## BEESWAX WANTED

You will save money and freight on your 1917 foundation by shipping us your beeswax and paying only for its manufacture into "SUPERIOR FOUNDATION." (Weed process.)

## OLD COMBS AND SLUMGUM

Send them along; for the lowest freight rate bill as "beeswax refuse." Our steam process removes every ounce of wax. We render on shares.

**SUPERIOR HONEY COMPANY, OGDEN, UTAH**





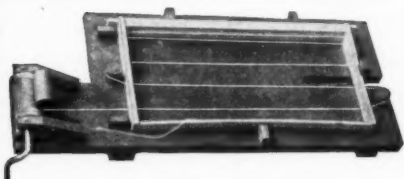




## Poultry Supplies

Poultry supplies of all kinds, best automatic grain feeders, fountains, feed troughs, dry mash hoppers, bone mills, exhibition and shipping coops, leg bands, shell, grit, bone, meat, foods, and remedies **ANYTHING YOU WANT.** Also Pigeon, Kennel and Bee Supplies. Circular free.

**Eureka Supply House**  
Box B-403, - Aurora, Illinois



PATENTED  
**WRIGHT'S FRAME-WIRING DEVICE**

Most rapid in use. Saves cost of machine in one day. Tighter wires, no kinks, no sore hands. Price, \$2.50, postpaid in U. S. A.  
**G. W. Wright Company, Azusa, Calif.**

### Why Not Get What You Want, And When You Want It?

The Atchley Queens and Bees need no recommendation to the beekeeping world. They have been buying them for FORTY YEARS, AND ARE STILL DOING IT.

#### BOOK YOUR ORDERS NOW!

One-pound package, \$1.40 each; 25 for \$32.50; 100 for \$125. Two-pound packages, \$2.25 each; 25 for \$52.50; 100 for \$210. Two-frame nuclei, \$2.30 each; three-frame, \$3.25 each. No queens. Untested queens, Italian or Carniolan, \$1.00 each, or \$10 per dozen; 100 for \$70. A big lot of fine tested queens cheap. Write for prices. Prices on bees and queens in large lots quoted on application.

**WM. ATCHLEY, Mathis, Texas**  
*The Texas Bee and Honey Man*

### FILMS DEVELOPED

All roll films developed for 10 cents. We return them the same day. Everything in the KODAK Line. Send for catalog.

**F. M. ALEXANDER**  
Atlantic, Iowa

### CAUCASIANS

I am the Pioneer Breeder of pure Grey Caucasian bees. Queens, nuclei, and pound packages.

**A. D. D. WOOD**  
Box 61, Lansing, Michigan

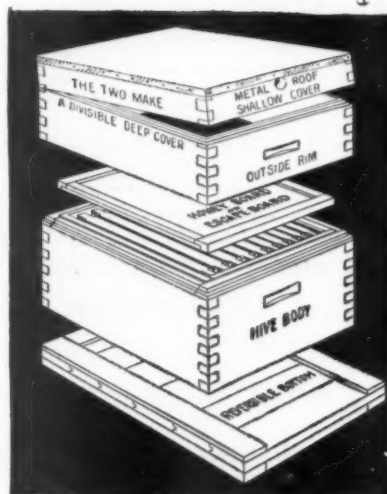
## PROTECTION HIVES

### Double Wall

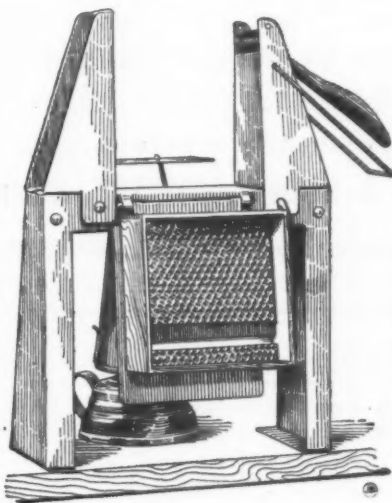
Price of five hives with outside rims, \$13.75; without rims, \$12.00 f. o. b. Grand Rapids. Mich. Delivered to any station in the U. S. A. east of the Mississippi and north of the Ohio Rivers with outside rims, \$15.00.

They are double wall with air spaces or packing as you may prefer. A large percentage of our customers use them with air spaces and no packing. Packed hives will not last as long as those that are not, as packing has a tendency to absorb moisture. They have  $\frac{3}{4}$  material in the outer wall, which makes them substantial. The inner walls are of  $\frac{3}{8}$  material.

If you have ever had occasion to spend any time in a building single boarded during cold weather you can appreciate the importance of double walls. Great quantities of fuel are required to keep the stove red hot, while you roast on one side and freeze on the other. Double walls in hives are equally as important. Send for catalog and special circulars, showing large illustrations.



**A. G. WOODMAN CO., Grand Rapids, Michigan**



## SECTION FIXER

A combined section press and foundation fastener of pressed steel construction. It folds the section and puts in top and bottom starters all at one handling, thus saving a great amount of labor. With the top and bottom starters the comb is firmly attached to all four sides, a requirement to grade fancy. Increase the value of your crop by this method.

The sale of Section Fixers has had a great increase this year. This is conclusive proof that they are giving universal satisfaction. They are the finest thing on the market for the purpose, and have given the greatest of satisfaction in every case when properly operated. We have hundreds of testimonials on file.

**A. G. WOODMAN CO.,**  
Grand Rapids, Michigan

## TIN HONEY PACKAGES

Do not wait longer, but secure your honey packages at once. The tin plate situation is becoming more serious from day to day. Freight traffic is slow and uncertain. We placed our order for tin plate for our 1918 Bee Smoker Trade some time before a state of war was declared. We dared not wait longer, for fear we could not secure it at all. Our three year contract on tin honey packages is still being honored, and runs until Jan. 1, 1919. We are saving money for carload buyers and others of smaller lots. Send us a list of your requirements. Do not delay. Act at once.

60-pound cans, one and two in a case

### Friction Top Tins

	2 lb. Cans,	2½ lb. Cans,	3 lb. Cans,	5 lb. Pails,	10 lb. Pails
Cases holding	24	24	....	12	6
Crates holding	....	....	....	50	50
Crates holding	100	....	100	100	100
Crates holding	603	450	....	203	113

**A. G. Woodman Co., Grand Rapids, Mich.**

**BEE-SUPPLIES** of all kinds; catalog free. Send 25c for 90-page book on how to handle bees. Discount for early orders. Honey for sale.

**J. W. ROUSE, Mexico, Missouri**

### SELECT ITALIAN BEES

by the pound. Nuclei QUEENS. 1917 prices on request. Write.

**J. B. HOLLOPETER, Rockton, Pa.**

### ENERGETIC HONEY GATHERERS

Best 3-Banded Stock

Untested queen, 75c. Bees per lb., \$1.25. In quantity price quoted on application. Prompt shipment. Safe arrival and satisfaction guaranteed. No disease. Shipments ready May 15.

**GILA VALLEY APIARIES**  
**M. G. Ward, Mgr. Duncan, Ariz.**

# Quality Service System

## SAFE ARRIVAL GUARANTEED

We are doing business under the above conditions. All orders received by us will have our immediate attention. Our STOCK HAS NO EQUAL. NEVER before have we been in the position to take care of our orders as WE are now. We have enlarged our **queen-rearing and pound package business.**

**Remember** all orders accepted by us will be filled by return mail or express if WANTED. If WE can't do it, WE will refund your money at once. You will be perfectly safe by placing your order with us for PROMPT DELIVERY. We quote prices as following:

			Bees by the Pound Without Queens		
	1	6	12		
Untested.....	\$1.50	\$ 7.50	\$12.00	1-pound bees.....	\$1.50 \$ 8.00 \$15.00
Tested.....	2.00	10.50	18.00	2-pound bees.....	2.50 14.00 27.00
Select tested.....	3.00	15.00	24.00	3-pound bees.....	3.25 18.50 35.00
Select breeder, \$5.00. Extra select breeder, \$10					
			Prices of Nuclei Without Queens		
	1	6	12		
1-frame.....	\$2.00	\$10.50	\$18.00	3-frame.....	3.50 20.00 37.00
2-frame.....	2.50	12.00	22.00	5-frame.....	5.00 23.00 44.00

**Our mail and express service is the best,** 24 outgoing trains daily. WE guarantee all queens to be purely mated. All bees free from any disease. Place your order with us and get **Quality, Service and System.**

**J. E. MARCHANT BEE & HONEY COMPANY, Columbus, Georgia, U. S. A.**

## The Proof of the Pudding Is In the Eating

The quality of Murry's queens and bees is shown in the increasing demand for them. Capacity of queen yards doubled last year and again this season. Advance orders up to March 5th nearly equal to total sales last season. Why? Because they get a square deal.

Three-banded Italians and Golden Italians. Orders filled by return mail. Safe arrival and satisfaction guaranteed. No disease. Health certificate with each shipment of bees or queens.

Queens	1	6	12	1	6	12	100
PRICES	March 15th to May 1st			May 1st to Nov. 15th			
Untested.....	\$1.00	\$ 5.50	\$10.00	\$ .75	\$4.00	\$ 7.50	\$60.00
Tested.....	1.25	6.50	12.00	1.00	5.50	10.00	
Select tested.....	2.00	10.00	18.00	1.50	8.00	15.00	
Breeders.....	5.00 to \$10.00 each, any time.						

For nuclei and pound packages, see March issue of this Journal, or write for circular.

**H. D. MURRY, MATHIS, TEXAS**



## DOOLITTLE & CLARK

Have some fine Breed-  
ing Queens now ready for  
delivery. \$2.50, \$5.00  
and \$10. Untested, \$1.00  
each, \$9.00 a dozen.

**Marietta, Onondaga Co., N. Y.**

### ITALIAN QUEENS AND BEES

I am better able to supply the trade with my Three-band Italian Queens, Colonies and Nuclei than ever before. Send for circular and prices.

**E. A. Leffingwell, Allen, Michigan**

## Queens and Bees from the Cotton Belt Apiaries

Three-banded Italians only. We are now booking orders for May, and June deliveries at the following prices, viz:

PRICES FOR ONE OR MORE					
	1	6	12	1	10
Untested.....	\$.75	\$4.00	\$ 7.50	1-pound package, wire cage, with- out queen.....	\$1.50 \$1.25
Tested.....	1.00	5.70	10.75	2-pound package, wire cage, with- out queen.....	2.25 2.00
Breeders.....	3.00 to \$10.00 each.				
Virgins.....	3 for \$1.00.				
1-frame nuclei without queen, \$1.50;			2-frame nuclei without queen, \$2.75;		
3-frame nuclei without queen, \$3.50.					

When queens are wanted with nuclei or packages add queens at prices quoted above. Write for discount on larger quantities booked early. We guarantee safe delivery of bees and queens, and reasonable satisfaction. Twenty years experience. No disease. Health certificate with every shipment. Write for testimonials and references if desired.

To avoid disappointment in the spring be sure and place your order NOW.

**The COTTON BELT APIARIES, Box 83, Roxton, Tex**

## QUINN'S QUEENS OF QUALITY

**ARE PEERLESS—"THERE'S A REASON"**

They are thoroughbred, pedigreed, three-banded Italians and Grey Caucasians. "Mendelian" bred; good qualities are accentuated. Special drones from superior mothers—results are obvious.

Prices—Untested, May and June, \$1.50 each. After June 30, \$1.00 each. Tested queens of each race, \$2.00 each.

For Italians, address Ft. Myers, Fla.; for Caucasians, address Houston Heights, Tex.

**CHARLES W. QUINN**

609 W. 17th Ave., HOUSTON HEIGHTS, TEXAS

## THE GUARANTEE THAT MADE "falcon" Bee Supplies Possible

The "falcon" GUARANTEE. Every hive, every super, every crate of sections, every pound foundation every article, and every queen leaving the "falcon" plant goes out with our "absolute satisfaction or money back" guarantee. For more than a third of a century we have stood behind everything we sell. If anything is wrong or not just what you thought it would be, we'll appreciate it if you write us, and we'll make it absolutely right at our expense. Our satisfied customers are to be found everywhere and are our best advertisement. "Once a customer always a customer," is synonymous with the name "falcon"

The beekeepers' past experience when "short" should have taught him that it's a "wise move" to get hives, sections and supplies ready in the next two months. We will be glad to quote on "falcon" supplies if you will send us an approximate list of what you will require for the coming season.

Red Catalog, Postpaid

Dealers Everywhere

"Simplified Beekeeping," Postpaid

**W. T. FALCONER MFG. CO., Falconer, New York**

*Where the good bee-hives come from*

## HEADQUARTERS FOR BEE SUPPLIES ROOT'S GOODS AT FACTORY PRICES

FOR

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KENTUCKY

TENNESSEE

We carry a large and complete stock of bee supplies, and are prepared to give you prompt service. We have just received several carloads of new fresh supplies. Send for our catalog.

**C. H. W. WEBER & COMPANY, 2146 Central Ave., Cincinnati, Ohio**

## Tennessee-Bred Queens

45 Years' Experience in Queen-Rearing

Breed 3-Band Italians Only

Nov. 1 to May 1			May 1 to June 1			June 1 to July 1			July 1 to Nov. 1			
	1	6	12	1	6	12	1	6	12	1	6	12
Untested.....	\$1.50	\$ 7.50	\$13.50	\$1.25	\$ 6.50	\$11.50	\$1.00	\$ 5.00	9.00	\$ .75	\$ 4.00	\$ .75
Select Untested..	2.00	8.50	15.00	1.50	7.50	13.50	1.25	6.50	12.00	1.00	5.00	9.00
Tested.....	2.50	13.50	25.00	2.00	10.50	18.50	1.75	9.00	17.00	1.50	8.00	15.00
Select Tested....	3.00	16.50	30.00	2.75	15.00	27.00	2.50	13.50	25.00	2.00	10.00	18.00

Nuclei (no queen) 1 fr., \$1.50; 2 fr., \$2.15; 3 fr., \$2.75; 4 fr., \$3.50; pure 3-band Italians. Select queen wanted, add price.

Capacity of yard, 5000 queens a year

Select queen tested for breeding, \$5.00

The very best queen tested for breeding, \$10.00

**JOHN M. DAVIS, SPRING HILL, TENN.**

## BEEKEEPERS' SUPPLIES

Send for new 1917 price list, now ready. Give us a chance to bid on your wants. We can save you money. We are in the market at all times for extracted honey in any quantity.

**THE M. C. SILSBEE CO.,**  
Haskinsville, New York  
Post-office, Cohocton, Rt. 3, N. Y.



Write for price list and booklet descriptive of our

**HIGH GRADE  
ITALIAN QUEENS**

And Bees by the Pound

**JAY SMITH**

1159 DeWolfe St.  
Vincennes, Indiana



# Lewis Sections

## HAVE INDIVIDUALITY

Because they are in a class by themselves—They are not like other sections—Very rarely do they break in folding—In fact, one of our customers writes us that he has put up (folded) thirty thousand Lewis Sections in a season and had not found one SECTION in the whole lot that was not perfect—Beekeepers everywhere, no matter what their preference may be for hives or other bee equipment, agree that when it comes to sections that Lewis Sections are supreme. This is

**BECAUSE** the material which goes into a LEWIS SECTION is of the right kind, especially selected for the purpose. The stock is sorted and resorted—the discolored stock thrown out, leaving only the whitest material to go into LEWIS SECTIONS.

**BECAUSE** the V groove, which is the most important process in the manufacture of a section is made just right. In the LEWIS SECTION it is cut just deep enough so that the section will not break in folding. The LEWIS SECTION expert has been supervising the manufacture of LEWIS SECTIONS for over thirty years.

**BECAUSE** the finishing of the section is given the utmost care. The LEWIS SECTIONS is polished on both sides in a double surfacing sanding machine designed in the Lewis plant especially for this purpose. It insures the uniform thickness of each and every section. The dovetailing of the ends is smooth, clean and just right.

**BECAUSE** even after the LEWIS SECTIONS are completely manufactured, the packing is considered a very important part of the marketing. All LEWIS SECTIONS are put up in regular standard packages containing a good full count. A tight wooden box is used, entirely enclosing the contents so that no discoloration from air can occur, no matter how long the sections are carried in stock. The package is also strongly braced at all corners, insuring delivery in good order.

At the same price you pay for other standard makes of sections  
you get all of the above when you buy Lewis Sections

**INSIST ON LEWIS SECTIONS—LOOK FOR THE BEEWARE BRAND**

**G. B. LEWIS COMPANY**



**Watertown, Wisconsin**

*Order from your nearest distributor*



Vol. LVII.—No. 5

HAMILTON, ILL., MAY, 1917,

MONTHLY, \$1.00 A YEAR

## SEVENTY YEARS OF BEEKEEPING

The Fourth of a Series of Articles By the Editor, Reviewing the Development of Beekeeping Since 1845

**W**E have already mentioned, in our second number of these reminiscences, that in 1867 suggestions were made for the use of artificial foundation for combs. The original idea of comb foundation dated back to 1857, when Mehring, a German, manufactured "wax wafers" cast in a mold, with the imprint of the cell base upon them. A Swiss, Peter Jacob, in 1865 manufactured a similar article. These were very crude products.

In his "Beekeepers' Guide," already mentioned, Mr. Kretchmer explained how, as early as 1843, his father devised a comb guide, made by dipping a narrow strip of linen in wax and starch, upon which the base of the cells was impressed, by passing it through a pair of engraved rollers. So his father would appear to have been even ahead of Mehring in the idea of comb foundation.

In 1861 Mr. Wagner secured a patent upon "artificial honey-comb foundation by whatever process made." In 1876, C. O. Perrine, a honey dealer of Chicago, bought the patent, which had never been put to use. Frederick Weiss, of New York, manufactured a few hundred pounds of printed wax in 1875. A. I. Root secured a pair of cylinders, made under his direction by a skilled workman, Washburne, but when Perrine claimed the ownership of the patent Root sold him his machine. However, shortly afterwards, Root and others concluded that the patent was worthless and the manufacture of foundation began, with different mills and dies. On the whole, A. I. Root is to be credited with the popularizing of the process. As with the movable frame hive, the time had evidently come for this.

To show how clumsy were the first attempts at making comb foundation,

we will quote what A. I. Root wrote in "Gleanings," February, 1876, page 29: "We have at present none for sale, except some that we purchased of Mr. Long (Weiss' agent in N. Y.) The thinnest measures 51-3 square feet to the pound and the thickest about three square feet." For some years very little was made as thin as 8 square feet to the pound, and the complaint of "fishbone" in comb honey became an objection to its use. Other objections were raised. It was



THE VANDERVORT FOUNDATION MILL  
(From an old wood cut)

said to sag in the frames. Bingham, at the Michigan convention of April, 1878, strongly opposed the use of it, contending that natural comb gave the honey a good flavor which comb foundation did not impart. But the great majority were enthused over its use, since it saved the bees the trouble of making so much comb, the cost of which was, and is still, estimated variously at from 8 to 20 pounds of honey, or more, for each pound of comb. It also secures absolutely straight combs, all worker combs, a very uncommon occurrence formerly in any apiary, notwith-

standing all the attention given by the careful apiarist to this requirement.

The Dunham machine, the Pelham mill, the Given press and later the Vandervort mills making foundation of different weights, up to 14 square feet to the pound, competed with the Root cylinders. But the press, as well as the plaster casts made in imitation of the European "gaufriers," lasted but a short time, the foundation made from these instruments being very inferior in quality and of heavy weight, besides being brittle and unfit for shipment. Yet many Europeans still confine themselves to the use of the metal "gaufrier" or of a plaster cast, for private use. Its inefficiency is plain when we read of apiarists well pleased with their own make, of a weight of 100 to 110 decimeters to the kilo (4.88 to 5.37 square feet per pound;) while on the cylinders it is readily made of more than twice as many feet, doing away with "fishbone" entirely.

It was during the year 1878 that C. O. Perrine, already mentioned in this article, made an attempt to revive the ancient Egyptian custom of floating apiaries, using the Mississippi River, as the Nile was used, to transport the bees following the crop. He bought a small steamboat, and bought also several hundred colonies of bees, starting from New Orleans in early spring and steaming up stream. But his attempt was a dead failure, in which he sunk a large sum of money.

About 1879, other races than the Italian bees were sought after for trial in America. We had ourselves imported Caniols in 1876, but had rejected them because of the resemblance of their workers to the common bee in color. Hybrids of these

with the common race were difficult to distinguish.

At the Chicago meeting of the North American Beekeepers' Association, in October, 1879, Rev. O. Clute, later author of "The Blessed Bees," under the nome-de-plume of "John Allen," suggested the appointment of a committee to secure the testing of various exotic races, Cyprian, Egyptian, Dalmatian, etc. H. A. King, of New York, had imported two queens claimed to be Cyprians. They were evidently pure, for all the report showed their bees to be exceedingly cross. The following year we tried this importation ourselves and soon had enough of them. We eradicated them as early as we could. Mr. D. A. Jones, of Canada, in connection with Frank Benton, of Washington, made a trip to the Holy Land, the Island of Cyprus and Egypt, bringing back a large importation of bees from those countries. None of them proved satisfactory. The only foreign bees which have proven of superior quality outside of the Italian are the Carniolan and the Caucasian, both of these races producing bees slightly lighter in color than the common black bee, but without the yellow rings characteristic of the Italian race. Frank Benton, later, made a trip around the world, in the interest of the United States Department of Agriculture, seeking new races of bees. None were found that proved of greater value than the Italians.

D. A. Jones deserves special mention otherwise because of his enterprise in beekeeping at that time. He kept bees on a large scale in Ontario, educated a number of students in beekeeping and founded the little village of Beeton, which is now an important agricultural shipping



THE GIVEN PRESS—(From an old wood cut)

point. It was in connection with him that McEvoy and others experimented on foulbrood. He established the "Canadian Bee Journal," which was published for years at Beeton. In the early eighties, a little pamphlet, "Foul Brood, Its Management and Cure," written by him, gave the revived starvation method of Schirach (1764-1770) for the cure of malignant foulbrood. Schirach is really the originator of this.

Among the improvements which modern beekeeping has brought to us, we should range the Doolittle method of queen-rearing, but in going back over the past we must say that although Doolittle popularized this method by adopting it with personal practical improvements, he was not the originator of it. The publication of his book, "Scientific Queen-rearing," in 1888, helped diffuse the method among queen-breeders. To find one of the originators, however,

we must go back to "Gleanings" for October, 1878, page 323. In this number, W. L. Boyd, of Hamilton, Ohio, suggests that, since acorns or rudimentary queen-cells are to be found readily in almost any hive of bees, it might be well to "cut them out, keep them on hand and get as many cells as you want by taking a flat stick, removing a larva that has just hatched and putting it in the bottom of the acorn; for the bees will accept the situation at once and soon have a nice sealed queen-cell from every acorn given them." The indefatigable A. I. Root, half in joke and half in earnest, then suggested that someone had spoken of artificial queen-cells and that they might be made by dipping a wet stick of the proper size and shape in melted wax. This was the nucleus of the idea which matured later and gave the "Doolittle method," fine descriptions of which were made in Hutchinson's "Advanced Bee Culture" and reproduced in our "Langstroth Revised."

We must not, however, neglect mentioning the Alley method of queen-rearing, which preceded the Doolittle method and is still popular in some of its modifications. His "Twenty-Two Years' Experience in Rearing Bees" became the "Bee Keeper's Handy Book," published from 1882 to 1885, in several editions. His method is also given in "Langstroth Revised" and consists of using strips of brood combs containing eggs, after removing every other egg, for the production of queen-cells.

Two of the modern leading books on bees were published in 1877, Cook's "Manual of the Apiary" and "The A B C of Bee Culture," by A. I. Root. The latter named was first published in installments in "Gleanings." In its present form, under the title of "A B C and X Y Z of Bee Culture," it is the largest book on bees ever published, a real beekeeping encyclopedia.

It is out of the question to mention, in these reminiscences, every invention made during the progress of beekeeping from the skep or box-hive times. In fact, many inventions were the result of slow ameliorations



JOHANNES MEHRING, THE INVENTOR OF COMB FOUNDATION



of original ideas. We can give an instance of this with the drone and queen excluders and queen traps.

Drones were already caught, to get rid of them, in Butler's time. He described what he called "a drone pot," and Langstroth also quotes the use of such an implement in Aristotle's times. "Langstroth's Hive and Honey Bee," second and third editions, mention the possibility of confining the queen to the hive, in these words: "As the queen cannot get through an opening 5-32 of an inch high, which will just pass a loaded worker, if the entrance to the hive be contracted to this dimension, she will not be able to leave with a swarm." In 1860, or thereabout, Collin, a French priest, devised what he called "grilles and tole perforee" screens and perforated iron sheets, having openings of the proper size to allow the workers to pass, and confining the queen and the drones. In 1870, V. Leonard, of Springfield, Pa., is mentioned as making a trap, upon the idea enunciated by Mr. Langstroth (A. B. J., 1870, p. 162) built evidently of wood. In 1881, D. A. Jones, (Gleanings, 1882, p. 200)

He was succeeded in that office in 1902, by N. E. France, one of the most successful and practical honey producers, who remained at the helm until the office was discontinued, in 1911. Mr. Secor has also been a member of the Legislature of Iowa.

## Looking Backward

BY EUGENE SECOR.

YOU do me the honor to count me among the old subscribers to the American Bee Journal. You say you have found evidence of that fact in articles contributed by me 37 years ago. Yes, I'm proud to say that the Bee Journal has been coming to me without interruption for a long time. I have been looking the matter up a little, and while I cannot say exactly how long I have been on the list, I find that I've been a correspondent at least as long as your investigations show.

I began to keep bees in 1867, so you see I will be fifty years old next summer, plus —. The first thing I did was to buy Quinby's book, and I am pretty sure it wasn't very much later that I subscribed for the first bee journal pub-

clime of Perpetual Youth. They say a woman is just as old as she looks, but that a man is just as young as he feels.

Beekeepers ought to be young always, for with them hope is never dead. If a frost kills the fruit-bloom they believe dandelions will feed the girl babies in the hive. If drouth sucks the nectar from the white clover, they are sure melilot will never fail. If linden refuses to give down, buckwheat and a lot of other late flowers are yet to follow. And if the honey crop is light one year we think that after a rest flowers will be doubly sweet the next summer. That is the philosophy of happiness—never to give up, never to lose courage, to forget the unhappy present and have faith in the future.

How many fads have come and gone in my beekeeping day! Many a man set out to revolutionize the industry by some invention or idea that looked so inviting to himself, and perhaps plausible to others until actually tried out, that the bee journals of the time would make interesting reading to the younger generation, if any one has the desire for historical research. Some of the things that occur to me now are: self-hiving, non-swarmling, and reversible hives; deep-cell foundation, apis dorsata, red-clover queens, and the fertilization of queens in confinement. All had their advocates, but all have gone to the scrapheap of impractical theories. But in the evolution of all things and the survival of the fit a few improvements have come to stay.

The experienced ones in the brotherhood were never swept from their moorings by the claims of enthusiastic amateurs. Thus it is that conservatism tempers the heat of radicalism, and radicals warm the cold feet of conservatives. So the world is kept in equilibrium, leaning just a little toward the polestar of progress.

Nothing is more evident than the growth of beekeeping literature in the past 50 years. As the editor is reviewing that subject in a masterful way I need not enlarge upon it. But the comparison is like a mule team to electricity.

Forest City, Iowa.

**Iowa Field Meet.**—A Beekeepers' Field Meet will be held in the City Hall at Fairfield, Iowa, on May 9th.

**Beekeeping in Guatemala.**—A recent consular report gives a summary of beekeeping in Guatemala which is very interesting. The production of honey is in the neighborhood of 700,000 pounds annually, most of which has, in the past, reached European markets.

Although it is in this section of the country that the stingless bees thrive, the report places special prominence on the fact that the honey entering the markets is produced by the ordinary honeybee, mostly blacks, though Italians are beginning to be imported.

The season for honey is from October to April, which is known as the "dry season."



THE OLD DUNHAM FOUNDATION MILL

first mentions perforated zinc for this purpose. Then in 1884, Alley patented his "drone and queen trap" and queen excluders came into use.

Will we add a little romance to our account of beekeeping progress and invention and speak of the poet of American beekeeping, Eugene Secor? He began writing on bees about 1882 and composed some of the prettiest short idyls and songs for the enjoyment of the English-speaking apiarists. The "Songs of Beedom," published some 25 years ago by Geo. W. York, are mainly from him, while the music is the work of good old Dr. Miller. Not alone on bees does Secor write. A little booklet, "The Calendar," containing a poem for each month of the year, is one of his most delightful productions. There are other poets of the bee in our day, but none to excel him. Mr. Secor has been President of the National Association (1892) and was General Manager of that institution after the resignation of Thos. G. Newman in 1897.

lished in America. Its first appearance was in 1861, if I mistake not.

The first edition of "Quinby's Mysteries of Beekeeping Explained" was published in 1866, and Langstroth's classic had appeared earlier—1852? I had all these helps before long.

I am quite sure I was a subscriber to the American Bee Journal a long time before I dared to send anything for publication that might come under the eye of the veterans of those days. I was a novice; they were experienced. I was afraid of them. But under the editorship of Thomas G. Newman, who was always very kind to me and overlooked the crudity of my effusions, I began to feel my way into print about 1880.

This is a funny world isn't it? In my younger days I was afraid of the old men. Now I'm afraid of the young men. 'Tis the young fellows who are running things now. Young America is at the wheel today. The only reason Dr. Miller isn't a back number is because he refuses to grow old. It is always springtime where he abides. I wish that some of the rest of us white-topt has-beens could live in the sunny



PUBLISHED MONTHLY AT  
1st Nat'l Bank Bldg., Hamilton, Illinois

Entered as second-class matter at the  
Hamilton, Illinois, Post-office.

C. P. Dadant, Editor.  
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Frank C. Pellett, Staff Correspondent.

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THE SUBSCRIPTION PRICE of this Journal is \$1.00 a year in the United States of America and Mexico; 3 years, \$2.25; 5 years, \$3.00; in Canada, 10 cents extra, and in all other countries in the Postal Union, 25 cents a year extra for postage. Sample copy free.

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## THE EDITOR'S VIEWPOINT

### Iowa Inspection Report

If you live in Iowa or elsewhere, be sure and send to either Frank C. Pellett at Atlantic, or to Prof. F. E. Millen at Ames, for a copy of the State Bee Inspection Report for 1916.

Mr. Pellett is thinking of giving up his job of State Inspection. If his resignation is to deprive the beekeepers of Iowa of further reports like this one, it will be regretted. The report in question contains about 100 pages, a number of good engravings, and some 25 or 30 addresses by leading practical beekeepers and writers, besides the usual report of inspection. It is well worth a place in every library of active beekeepers.

### The A B C of Beekeeping

The 1917 edition of the "A B C and X Y Z of Bee Culture" is on our desk. It is the largest, most complete and finest work that was ever produced concerning the honeybee. It is a cyclopedia of beekeeping. What more can we say?

### Enticing Natural Swarms

In the Farmers' Weekly of Cape Town, South Africa, a contributor reports having lured swarms to empty hives by melting propolis and smearing it inside and about the entrance of empty hives shortly before swarming time, placing also some dry combs inside. The strong odor of the fresh melted propolis enticed the scouts that were in search of a home. He secured several swarms in this way.

### Our Oldest Subscribers and Contributors

For the past year we have been trying to get together the names and photos of our oldest subscribers still living and still reading the American Bee Journal. We have asked for the names of all who have been constant subscribers for 30 years or more. But

the difficulties are great in gathering together such a list of experienced producers. Some are too modest, others too aged to comply with our wishes. Still we have a list of 12 or 15 which may be increased within the next month, all men of great experience, and we propose to publish it soon.

Meanwhile we give on our cover page the photo of one of the juniors among them. The reader will find within these pages a letter from him and also a mention of his work in the current installment of "Seventy Years of Beekeeping."

### Caucasian Beekeeping

We are glad to present to our readers two views of the queen-rearing apiary of the "Station Séricicole" (Silkworm Rearing Station) of Tiflis, Caucasus, also two views of nomadic honey-producing apiaries under the same management.

Professor C. A. Gorbacheff, who is in charge of these apiaries, informs us

that the rearing of queens for sale will begin to a limited extent during the present year in these apiaries. As soon as they are prepared to fill foreign orders the matter will be mentioned in the Bee Journal. We trust the terrible war conflict may be at end by that time, so that the American beekeepers may be enabled to give a full trial to the pure gray Caucasian bees of Russia, by direct communication.

Our good wishes are extended to the Caucasian beekeepers in their progressive efforts.

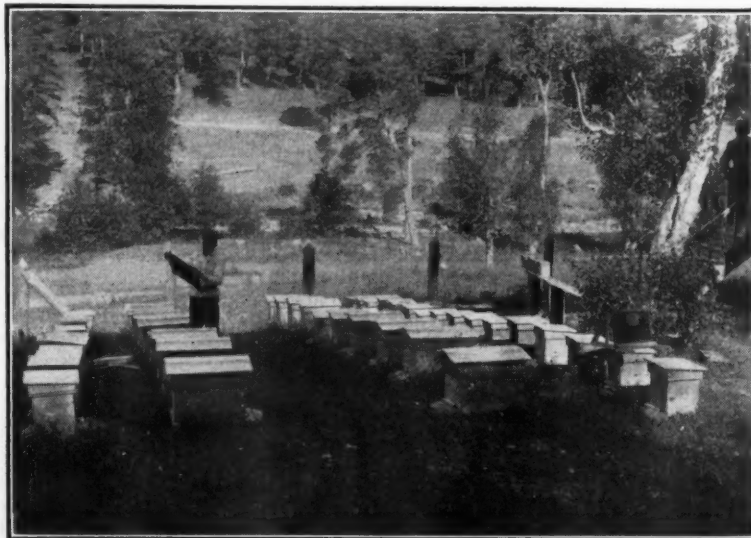
LATER.—We acknowledge from the same source an album of views of Caucasian apiaries received with the compliments of the Caucasian Beekeepers' Association. The letter accompanying this album says:

"Outside of the ethnographic interest to be found in these characteristic views of apiaries, there is another interest in them. It is that of the remembrance which they will leave, for the time is not very distant when these hives will be only a memory; the hives of the Dadant system already having displaced the native hives in several regions of Transcaucasia, during the past 10 years."

The views, some 50 in number, are exceedingly interesting. We propose to publish them, a few at a time, in these columns. They will show the diversity of ancient methods in a country which is now making great strides of progress. Russia is coming to the front.

### Apiary Inspection

After the publication of Mr. Pellett's inspection criticisms, in the March number, followed by Mr. Bender's remarks in April, we are glad to give a summary of the same subject by our



ONE VIEW OF QUEEN-REARING APIARY OF THE SERICULTURE STATION OF CAUCASUS AT BAKOURIANY, 5428 FEET ABOVE SEA LEVEL.



riend Dr. Phillips, who is better placed than any of us for such work. After reading it the reader will conclude, as we had done already, that there is after all a great benefit in apiary inspection but that that benefit is mainly educational. The practical apiarists who, like myself, kept bees for half a century without ever seeing any foulbrood and all at once found themselves surrounded with it, have a very deep conviction that, if no fight had been made, the disease would have swept the country before becoming extinguished.

Although far from eradicated everywhere, it is so nearly controlled that beekeeping is thriving in spite of an occasional show of the disease. Foulbrood has been a blessing in disguise, for it has compelled more attention to the business of beekeeping.

### Sacbrood

Dr. G. F. White, the scientist who has first established the bacteriological difference between the two kinds of foulbrood and who has also named "sacbrood" because of the appearance of the dead larva and its resemblance to a sac full of liquid matter, is now giving us a thorough description of sacbrood in Bulletin No. 431 of the United States Department of Agriculture.

### Decoy Hives

The Editor not long ago met an experienced beekeeper, Mr. S. L. Cork, of Peru, Ill., who has had considerable experience with the securing of absconding swarms by the use of decoy hives. Mr. Cork says that he has succeeded best by placing the decoy hives in the forks of trees. During the season of 1916, a notable year for natural swarming, he fastened 11 hives in trees in this way, six feet or more from the

ground, and in each of these a swarm volunteered to locate. Three hives placed on top of a shed secured only one swarm. It is creditable and easy to understand that bees would naturally look for tree hollows some distance above ground rather than for lower abodes.

### The Queen is Coming

Here is a story which went the rounds of the European bee magazines some 15 years ago. It may not be true, but "*se non e vero, e ben trovato*" (if not true, it is likely).

"Lord Cecil is a lover of bees, but his pet pursuit was the cause of a little trouble to the folks of the city. He had a queenless colony once and wrote to a breeder for a queen, asking to be informed by telegraph when she was to be sent. To satisfy him, the shipper wired: 'The queen will reach your station at 3:40 p.m.' On his arrival at the station at the indicated hour, he was much astonished to see a crowd of people in their best clothes. The mayor was there in a frock coat, and a band was playing its finest tunes. Upon enquiry he ascertained that one of the telegraph operators had been indiscreet enough to give out the announcement of the arrival of the Queen of England at that hour. A few words of explanation dispersed the disappointed crowd."

### Peppermint for Adult Bee Diseases

Mr. C. W. Aeppler transmits to us the translation of a letter from an eastern Switzerland apiarist recommending the use of peppermint in diluted honey to be sprinkled over the bees in diseased colonies which are suffering from diarrhea, paralysis, May disease and similar troubles.

In Italy, in the Province of Ancona, in 1916, similar remedies were recommended by apiarists who claimed that a preparation of honey with lavender,

ginger, rosemary and other tonics was beneficial. We believe these things may do good, but such severe epidemics as the Isle of Wight disease would probably not yield to a treatment of this sort. Who knows, however, but that the initial appearance of the disease may be prevented by the use of tonics in the food of the bees?

### President Wilson on Production

The address of President Wilson to the people published on Monday, April 16, has been sent to all publishers of agricultural magazines. We cannot give it in full, but we should give emphasis to a few points of this memorable appeal.

"The supreme need of our nation and of the nations with which we are cooperating is an abundance of supplies, and especially of food stuffs. . . . The world's food reserves are low. . . . Every one who cultivates a garden, helps, and helps greatly, to solve the problem of the feeding of the nations."

Not only is it well to heed the appeal of our President to all producers to work as earnestly as possible in the production of food stuffs; it is also well to urge the people to economize their resources.

America has been—and is yet—a wasteful nation. Let us remember that the time may not be very far when some one may need that which we carelessly waste. Let us not only produce all we can, but save all we can. What we waste might be useful to some one else, if we do not need it ourselves.

### Bees and Pollination

For an evidence of the usefulness of bees in prune pollination, read Bulletin No. 274 of the California Agricultural Experiment Station, by A. H. Hendrickson. It is quite interesting. It is another rivet in the evidence favoring bees in plant fertilization.

### This Season's Crop and Its Price

We call our readers attention to the page of Crop and Market Reports in the back part of this magazine. Reports of offered prices and contracted prices for 1917 are beginning to filter in.

Just what the price on honey will be when fall comes is exceedingly hard to determine. We are passing through an unusual period which is subject to change in a comparatively short time.

One thing which we would urge upon our customers, however, is to make some distinction between their retail and wholesale prices of honey. Too many beekeepers in the past have sold honey locally for 10 cents or even less for extracted per pound and then bewailed the fact that they were offered only 6 or 7 cents in a wholesale way.



ANOTHER VIEW OF THE SAME QUEEN-REARING APIARY



## The Necessity for Increasing the Honey Crop

BY DR. E. F. PHILLIPS.

**T**HE present necessity of increasing and conserving the food resources of the country, advocated by the Secretary of Agriculture in recent statements, should be realized by every beekeeper, chiefly from patriotic motives, but also from his own interest. The rapidity with which the unusually large honey crop of last year was sold does not indicate danger from overproduction, even in times of peace, and there is every reason to expect that 1917 will see a good honey market.

There need be no fear of overproduction in the face of a probable shortage of sugar. On this latter point the Secretary of Agriculture says in his statement of April 7, "Only about 20 percent of the supply of sugar normally consumed in the United States is produced domestically, and this amount cannot be increased appreciably during the coming season. Unless normal imports of sugar reach our shores, therefore, a shortage of this food is inevitable." After mentioning other forms of sugars, the Secretary says: "In many parts of the country honey production may be increased by closer attention to bee-culture."

Beekeepers should do their utmost this year to increase production, not only by increasing the number of colonies in so far as it can be done without decreasing the crop, but especially by giving their bees the best of attention. Those who have their bees in box-hives are being urged, so far as they can be reached, to adopt the modern equipment, but this will be valueless unless they at the same time adopt modern practices. Natural swarming should be curbed as much as possible, and increase should usually be made by artificial division. The crop may often be materially increased by giving the bees plenty of room for storage, for gathering often ceases when bees are overcrowded.

In this regard many commercial beekeepers are not doing their best. Those owning only a few colonies may profitably increase the number of their colonies, but they should remember that without intelligent care bees will not be profitable, except in rare seasons. The tendency at present is rightly to encourage the professional beekeeper, who knows how to get the most from his bees. The professional beekeeper, and those who wish to enter this class, should at once consider the establishment of additional apiaries, care being exercised not to overstock any one locality. To those who have not begun outapiary management, this year promises to be a good time to make the start.

Nobody can tell now what the crop of 1917 will be, but the prospects over most of the country seem good. Prices promise to be as high as those obtained for most of the 1916 crop, and possibly higher. Not more than one-tenth of the available nectar in the United States is gathered at any time, so beekeepers can do a patriotic service and can at the same time bring profit to themselves by saving some of the wasted nectar.

In order that the beekeeper may ob-

tain a fair price for his honey and that at the same time the consumer may obtain it at a reasonable price, the bulk of the honey crop should as usual be sold on the home markets. This will do much to prevent a glut on the market in the fall. Before sending honey to wholesale markets, the beekeeper should get all the information available concerning the crop and should also have definite knowledge of the demands of the market.

The Department of Agriculture, through the Bureau of Crop Estimates, will issue the usual honey crop reports in May, July, September and November. The Office of Markets proposes to make available the data of crop movements at intervals during the shipping season. No beekeeper should send honey to wholesale markets before consulting these reports. The Bureau of Entomology will, of course, continue to assist beekeepers with the various problems of production. All of these offices will gladly assist beekeepers in their respective fields.

The beekeeper's part in the present campaign of food preparedness is first to produce all he possibly can, and secondly, to market it wisely and only after he has full information concerning the markets. Beekeepers will do much toward correcting bad market conditions by distributing their sales over a longer period, for honey is no longer a seasonal food, and to dump all the season's crop on the market at once has so far invariably led to lower returns to the producer, but has not correspondingly decreased the price to the consumer. When honey is produced in large quantities, the market facilities will doubtless be increased so as to take care of the honey as soon as it is removed from the bees, but at present it is often better for the beekeeper to hold it.

This brief note will serve to indicate wherein the beekeeper can "do his bit" in this emergency. He should realize that to assist in producing an important food is a patriotic act.

Washington, D. C.

## Burning Hives Affected With Foulbrood

BY F. DUNDAS TODD.

**S**OME months ago I noticed that Dr. Miller thought the wisest way to handle a few cases of American foulbrood in his apiary was to wipe out the whole thing, lock, stock, and barrel. If his example is to be followed to any extent by others it may be worth while for me to set down briefly the way I handle such cases, for I fancy I have had about as much experience in burning affected colonies as any man on this continent. I frankly own I made rather a mess of things to begin with, but now I can enter an apiary in the evening when flight has stopped, smother the bees and have three or four hives a glowing mass of cinders in about half an hour. The biggest job I ever tackled was to clean up an apiary of 10 colonies and four box-hives, most of the hives being three stories high. The owner refused to assist in any way whatsoever, so I went at the affair single-handed, and in

two hours and a half there was nothing left to indicate that an apiary had ever existed, beyond a big mass of glowing embers.

When I find foulbrood in any apiary and have shown it to the owner, I arrange with him to dig a hole three feet square and at least a foot deep, choosing the spot where there is little likelihood of damage resulting from the heat of the fire. In an ordinary case a matter of 20 feet from the nearest tree is generally enough, but due allowance is made for the direction of the wind. The nearer the hole is to the apiary the better, but I have had in the city to wheel heavy hives along rough alleys to a vacant lot covered with huge stumps and underbrush.

Then I want him to have on hand at least 30 pieces of first-class stove wood. We need a fire, a real fire, the kind a boy makes for a camp fire without worrying about the cost of fuel. In a beehive there is a most amazing amount of water that must be evaporated before combustion can take place. I plan to let nothing escape me, not even one bee, and it rather surprises a novice to see how quickly a roaring fire will dampen down the moment several thousand dead bees are dumped on it. The same is true when the combs are placed on the fire, for in a few minutes the water from the brood and honey will drown it out unless the heat be very great.

When, therefore, I reach the apiary my first task is to kindle the fire, so arranging the wood that the whole will be a mass of hot coals when I want to use it. I want the earth in the bottom and sides of the cavity to be very hot, so that all water will be quickly evaporated.

The fire burning freely I attend to the smoker. In my first adventures I tried the smothering system of our forefathers, digging a hole, starting a small fire and adding sulphur, then straddling the fire with the hive without a bottom-board. The first downpour of bees simply drowned out the fire, and maimed bees were crawling everywhere. Then I turned to the smoker. I had often heard that just a whiff of burning sulphur would almost instantly smother every bee of the colony, but I want to assure my readers that is far from being the truth, for even with a powerful blast of sulphur fumes one cannot kill all the bees in less than three minutes. When I have to kill bees I try to do the job as speedily as I know how. A weak colony can be wiped out in a minute, but a hive of 20 frames covered with bees is another story, for the instant they fall off the combs they choke the air passages, cover up each other, and so prevent the fumes reaching every cranny of the hive.

It is the first few blasts that count above all things, consequently the problem is to have plenty of burning sulphur in the smoker, burning so freely that it is simply a molten, blazing mass. To attain this, start the smoker with just a little rags and work the bellows until the fire is burning freely, then drop in several small pieces of rock sulphur and get them burning just as well, then add more until you have about a quarter of a pound in all. In a little while smoke will cease to issue from the nozzle, blue flames will be common, and

the gas will issue from the explosive force.

I find it advisable, though seldom necessary, to wear my working bee suit, including gloves, as, if the hive be the least rickety, bees will leak at unsuspected places and I kill them with the fingers of the left hand as fast as they appear.

All ready, I kneel in front of the hive and place across the entrance a piece of lath, cut about an inch and a half shorter than the full entrance, leaving the blank at the right. Into this space I push the nozzle of the smoker and pump steadily and persistently until all noise in the hive ceases. To make sure of inside conditions I generally place my ear against the side of the brood-chamber, and when all is quiet I proceed to the next victim.

It is very important for the inspector's comfort that he inhale none of the fumes, so I generally endeavor to choose a night when the wind is from a southerly direction. But such ideal conditions are not always obtainable,

for instance, last summer in Vancouver, north winds were persistent for weeks, so twice I inhaled considerable sulphur fumes on account of a sudden change in the direction of the wind. I usually lie out full length with my head to the left of the hive and face turned away, but even with these precautions I was caught. The result in my case is that for about three days after being "gassed" I am very languid and do not feel fit for much exertion.

The bees all smothered, I carry the first hive to the fire, bottom-board in position. Setting it down I remove the cover, turn it upside down and lay it to the left. Then I lift the hive off the bottom-board carefully and set it on the cover. On the bottom-board lie the dead bees, many thousands of them when the colony is strong. Lifting the board I shoot the bees into the fire, which ought to be now a solid mass of glowing embers. At first the fire will deaden, but as soon as it brightens up, I lift the hive and set it squarely in the center, then strip off the quilt so that

the space between each pair of combs becomes a chimney. In a minute there is fierce hissing as the water runs out of the brood and honey, but in a few minutes a really strong fire will overcome all that, so I now set bottom-board and cover by the side of the body, and then carry in the next hive to repeat. By this time the burning wax gives a powerful heat so that one can pile up all the rest just about as fast as they can be handled.

The chief reason for digging the hole is to make certain that no honey can escape. The embers from the fire-wood and hives easily fill the hole and burn everything combustible. The beekeeper generally fills it in before retiring so as to avoid all risk of fire on the premises.

In conclusion, let me repeat that the chief essentials are a powerful fire in the hole, and a thoroughly hot smoker well charged with sulphur. Either can be easily extinguished by covering up with dirt; as a matter of fact when I have smothered the last colony I throw a loose handful of dirt in the smoker. Having so much smothering to do, I keep one specially for the job, preferring the variety with the hinged cover and forward projecting nozzle.

Victoria, B. C.

[Mr. Todd uses the heroic treatment for foulbrood. He has repeatedly told us that he does not believe in trying to save the bees or the hive of an affected colony. Of course, where there are only two or three cases and they are bad, and one does not wish to be bothered with much work, it may be advisable. Yet if the transferring is done as carefully as his "burning," and if the empty hives are carefully singed immediately with a tinner's or painter's gasoline torch, there is no possibility of transmitting disease. By all means save the hive. But it is better to burn up the honey and the combs of the diseased colonies.—EDITOR.]



A THREE-STORY OBSERVATORY HIVE—F. Dundas Todd

## The California State Meeting

BY J. E. PLEASANTS.

THE California State Beekeepers' meeting was held at Exposition Park, Los Angeles, Feb. 16, 1917. This was one of the best meetings the association has had for years—short, harmonious, and instructive. The first day was mostly devoted to business.

The resolution for beekeepers' Legal Aid was repealed almost unanimously, it being the consensus of opinion that such a clause in the Constitution would only have a tendency to cause trouble.

The election of officers resulted in almost the whole staff and Executive Board being chosen from the northern part of the State. And the next meeting will be held in the North. B. B. Hogaboom, of Elk Grove, Sacramento county, was elected president.

There were interesting and instructive lectures and talks on a wide range of subjects. George J. Brown made a strong talk on the methods of the "United Honey Producers", which was enthusiastically received. Mr. Brown has recently been made president of



the United Honey Producers for California. A better choice could not have been made.

Prof. Coleman's moving picture display on California beekeeping was indeed a work of art. The work he has accomplished in this line, and has in prospect, is almost the work of a genius, if means can be obtained to complete this. This is the only scenario of a complete series which Prof. Coleman has in progress of making, for the showing of every phase of the life of the apiary and handling of honey and wax. It is a stupendous work if it can be carried to completion, as no doubt it will be. The educational value of such a series of films, for schools and colleges, and for the beekeeper and laity, can hardly be over-estimated.

The ever-recurring container subject was brought up by J. D. Bixby, who advocates the use of barrels for extracted honey. The barrel *vs.* can and case was spiritedly discussed, but it would seem, while both have their merits, the 5-gallon can and its twin, securely protected, in a strong case, have been proven to be the survival of the fittest. They have the advantage of being non-leak in all climates, and about as convenient a method of handling as we have yet had. The barrel was tried out long ago and discarded in most places.

Marketing through the Fruit Exchanges was ably handled in a paper by T. O. Andrews, Inspector for Riverside county, and some practical points brought out.

A standard color for honey was the subject of a discourse by M. C. Richter, who is an advocate of blending honey. While some advocate and practice this, many object to it, as it would put all honey on a level. The producers of the fine grades of white delicately flavored honeys, such as sage, white clover, etc., would suffer by such a blending. It is necessary to have the different grades and flavors to suit different tastes.

Secretary Shaffner spoke on the Legal Defense Fund. This resolution, however, was voted down and stricken from the Constitution, it being the opinion that it only caused trouble.

The address by Supt. Davison, of the State Exposition, was a strong plea for a good standing exhibit by the beekeepers. This ought to be done.

Mr. Mendleson was asked to supply a glass globe filled by the bees for the exhibit, which he agreed to do.

The meeting at Exposition Park was most appropriate. The Park is owned by the State, and Exposition Hall is designed for the use of State societies. The museums of Exposition Park are full of interesting collections peculiar to the Southwest. These afforded entertainment to the members out of routine hours. The specimens taken from La Brea Rancho asphaltum beds are a wonderful collection. The mastodon, sabre-toothed tiger, and others from this oil bed, are rare and preserved as prehistoric remains seldom are. It is something which all our residents, as well as tourists, ought to see.

The election of officers resulted in a complete staff, and almost all of the Executive Board, being chosen from the northern part of the State. The next annual meeting will be held in the North.

Orange, Calif.

## Different Methods of Queen Introduction

BY DR. C. C. MILLER.

**I**N the British Bee Journal of Dec. 21, 1916, is a fine summing-up of different methods of introducing queens by W. A. Sheppard. He says:

"Numerous plans have been devised for introducing queens, but there are very few that can be absolutely relied upon to give satisfactory results under all conditions and circumstances. At certain times of the year, for instance during a honey flow, the introduction of an alien queen presents very little risk, and almost any method employed would be successful then; but when there is no honey being brought in by the bees, queen introduction often presents many difficulties, especially to the amateur beekeeper. The following are some of the methods that have been recommended during the last few years:

"**WATER METHOD OF QUEEN INTRODUCTION.**—Kill the old queen; remove all combs from the hive and shake into the bottom with a sharp jar, all the bees possible. Sprinkle the mass of bees on the hive floor until they are soaking wet. Use plenty of water; there is no danger of overdoing this part. Wet the new queen thoroughly and put her on the pile of bees. Put back combs, and the job is finished.

"**INTRODUCING BY SMEARING QUEEN WITH HONEY.**—Put the queen in half a cup of honey. Do not be afraid to put her away down into it with your fingers. Smear her all over, the bees will lick her clean. Get her covered deep, and pour her and the honey into the top of the brood-chamber.

"**SIMMINS' DIRECT INTRODUCTION.**—1. Keep the queen *quite alone* for not less than 30 minutes without food, but warm.

"2. Insert after dark, under a quilt, first driving the bees back with smoke.

"3. No further examination is to be made until after 48 hours have expired.

"4. Make no division of or nucleus from the hive within three days prior to insertion of queen.

"**ARTHUR C. MILLER'S SMOKE METHOD.**—Inject into hive a cloud of thick white

smoke, and use enough to get the bees into a heavy roar. Then run in the queen, and shut in the smoke and queen for about ten minutes.

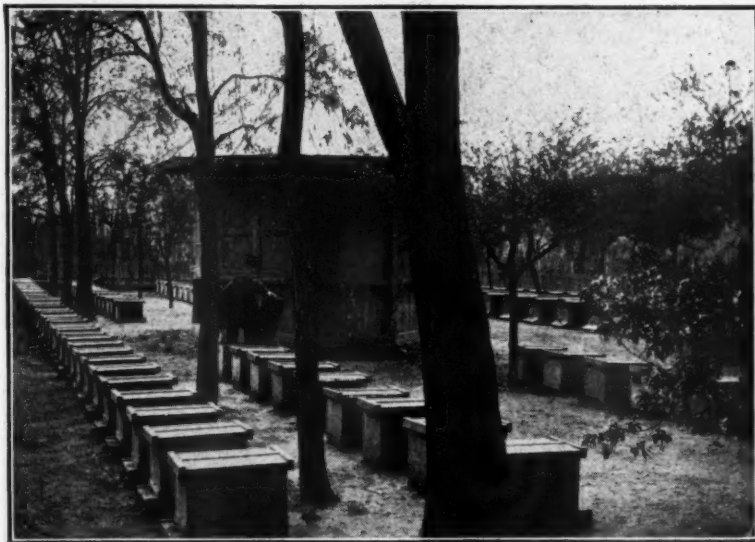
"**REQUEENING WITHOUT DEQUEENING—DOOLITTLE'S METHOD.**—If you wish to supersede any queen on account of old age or any other reason, you have only to put on an upper story with a queen-excluder under it; place a comb of brood, with a queen-cell upon it, in this upper story. After the queen-cell has hatched, withdraw the queen-excluder and your old queen is superseded without your ever having to find her.

"The foregoing are methods of introducing queens without the use of a cage, but there is little doubt that there is less risk of failure and without much disturbance to the bees by using either of the following plans:

"**FRAME CAGE METHOD.**—A wire-cloth cage is constructed large enough to take an entire Langstroth frame. Into this place a comb of hatching brood, after first shaking off all the old bees; then insert the queen and hang the cage in the center of the brood nest for two or three days, when the comb can be removed from the cage and replaced in the hive. The young bees that have hatched out in the cage will not be antagonistic to the fresh queen. This is the only one they ever knew.

"**PIPE COVER CAGE METHOD.**—An ordinary wire-cloth tea strainer with the wire attachment for the tea-pot removed makes a good introducing cage. It is pressed into the face of a brood-comb about half an inch deep with the queen underneath. She is liberated after about 48 hours if the bees are then seen to be friendly disposed towards her. If not, she can be caged again for a further period.

"**TWO OTHER CAGE METHODS.**—Catch the old queen and place her in the cage intended for the new queen. After a few hours remove her and put the new queen in the cage. The bees then more readily accept the new queen, as the odor of the old queen remains behind. Or, put the queen to be introduced into a new cage with one or two newly-hatched bees from the hive to which you are going to give her.



NOMADIC APIARY FOR HONEY PRODUCTION AT THE SERICULTURE STATION OF CAUCASIUS. (Sericulture is the silkworm industry)



**MAILING CAGE METHOD.**—The ordinary mailing cage, inverted over feeder, is generally a safe and easy way of introducing a new queen. The bees of the hive liberate her in from 24 to 48 hours by eating away the candy. This plan can be much more sure by adopting either one of the methods just described, in addition. If at the same time a slow feeder is placed on the hive containing warm thin syrup, it also helps considerably by putting the bees into a favorable humor for accepting a new queen."

#### LESSENING THE RISK.

Although the plans enumerated by Mr. Sheppard may be successful in general, yet with any one of them a certain percent of failures may be counted on. The number of these failures would be considerably lessened if we could be rid of the older bees of the colony to which we desire to introduce a queen. For it is these older bees that are especially antagonistic to any royal stranger. Fortunately it is possible to rid a colony entirely of all its older bees, the field bees, and in the case of a queen of considerable value it is well worth while.

If the hive be removed to some distance, and in its place be set another hive containing one or more frames of brood and honey, the bees that go afield on their return from gathering, instead of going to the old hive in its new location, will go to the old location and enter the new hive. Taking advantage of this fact, we will lift the hive from its stand, set it temporarily to one side, and set in its place an empty hive, and into this empty hive put one or two frames taken from the old hive, perhaps the two outside frames which contain little brood. Vacancies in either hive may be filled with dummies or otherwise. Any supers that may have been on the old hive will now be put upon the new one, and the hive-cover placed over all. Upon this cover we will set the old hive, of course covering it up. We may safely count that within two days all fielders will be out of the old hive and in the new. Therefore, at the end of

that two days there will be only the younger bees in the upper hive, ready to receive hospitably any queen that may be offered. The queen may be given in an introducing cage at the time the change of hives is made, provided it takes two days for her to be released from her cage; if the time of releasing be less, then the giving of the caged queen must be delayed accordingly. In three to five days after the queen is out of her cage, the old hive may be taken down and restored to its original place on its stand; any comb or combs that had been taken away being returned, and the hive that has been upon the stand for a few days entirely removed. The bees that have become fielders in the hive that has been on top will now, upon their return from the fields, settle upon the top of the hive where they suppose their entrance ought to be, perhaps forming quite a cluster. Soon, however, some bee of exploring turn will make its way down the front to the entrance below, others will follow, and all will be well.

#### ABSOLUTELY SAFE INTRODUCTION.

There is, however, a plan of introduction that is entirely safe. It is some trouble, but may be well worth while in the case of a valuable queen. About eight days before you expect to introduce your queen, go to a strong colony and put all but one brood in an upper story over an excluder, leaving the queen with one brood below the excluder. Another way is to put an excluder over a strong colony, over this put an empty story, and fill this empty story with frames of brood taken from different colonies. This plan has the advantage that you may choose only the best frames, those that are filled with well matured brood. Eight days later, when all brood will be sealed, brush every bee from these combs, put them in an empty hive, set this hive on a stand of its own, put in your queen, and close up tight so that you are sure no bee can get in or out. If you think there is any danger that the brood may be chilled at night, then you must put the hive in a room that

will be warm enough at night.

A still better way is to put the beeless brood in a hive-body over an excluder upon the hive of a strong colony, putting in the queen and covering up without any bees. Of course young bees will at once begin emerging from their cells, having known no other mother will be entirely friendly to the queen. About five days from the time the queen was given, these bees with their brood and queen must be put upon a stand of their own, in case they were not at first put upon their stand, and the entrance must be opened enough to allow the passage of one bee at a time. As more room for passage is needed, the entrance must be enlarged. In a few days you will have a good colony without having endangered the life of the queen in the least.

## Why Some Beekeepers Fail

BY H. B. PARKS, BIOLOGIST.

**T**he following paper is the result of an investigation as to why so many of those who keep bees do not make a success of the business and why so many of those who have tried have failed.

The area covered by this investigation is the Grand River System of Northwest Missouri. While this is not a region of extensive orchards, it is a section where small orchards are very common, where alfalfa and sweet clover are most abundant. Of the 159 species of plants which are visited by the honeybee for nectar, in a very similar location in Illinois, as reported by Dr. Charles Robertson, who has done more perhaps than any other man in the Mississippi Valley in studying insect visits to plants, 142 grow in greater or less profusion here also. This region is so located that it partakes of the character of both the prairie and forest. The climate is favorable to the bee, as the bee-trees cut each year attest.

A few attempts at interviews with bee-men were so laden with results that the writer adopted the census method of gathering information. Few men like to tell of their failures and only a few who were successful would talk. A reliable beeman was interviewed, facts about his own experiences and what he knew about others were recorded, then these statements were in a casual manner brought to the attention of the one about whom the statement was made. In almost every case the statement was verified and some additional material added.

The writer attempted to follow the outline given below:

1. Time you have been engaged in bee work?
2. How did you commence?
3. Why did you start beekeeping?
4. What kind of bees did you have?
5. What kind of hives did you use?
6. What was your greatest trouble?
7. Did you have disease in your hives?
8. How many seasons did you fail to get a honey flow?
9. What was the reason?
10. Would you advise others to keep bees?
11. How many swarms should a man keep?
12. Do you count yourself a success



ANOTHER NOMADIC APIARY OF THE SERICULTURE STATION OF THE CAUCASUS

or failure as a beekeeper?

13. In either case, why?

Mr. B.—The first man interviewed is a bee lover; has kept bees 35 years and is well informed. He has at present 37 colonies of bees. This year he took off 2700 pounds of section honey from 30 colonies, spring count. He is a small farmer, and lives on a 10-acre farm at the edge of a small town. He took up beekeeping as a boy because of an accident that lamed him. One year he took off 8000 pounds of comb honey from 32 colonies. Some years he got only 300 pounds from 30 colonies. He would advise all farmers to keep a few colonies, but thinks only the specialist can make money with bees. He has no disease and few moths; attributes success or failure to get honey to the food supply of the bees.

Mr. X. is a specialist, and did not like



THE FLOODS IN AUSTRALIA COME DOWN  
IN A NIGHT AND SELDOM EXTEND  
OVER TWO DAYS

to talk. He has about 200 colonies, but would give no figures. His honey is on sale in a number of the neighboring towns. He says that any one who attends to the business will have success. Does not advise farmers to keep bees.

Mr. C. H. was crippled by an accident 15 years ago; was set up in the bee business by his employer, and did well for a few years, but did not like bees. The moth killed most of his colonies; has only five colonies today. Some years he never put on supers or removed those already on. Beekeeping is a failure and the man a fool who tries it. In this case the hives were in a thicket of plum bushes, and had not been touched for three years.

Mr. G. lives in town, and has 10 colonies; keeps this number and sells the excess swarms; has never had any trouble. He advises all to keep a few colonies; claims a good honey flow each season.

Mr. C. C. was a common type of the

fall of 1916, and was the most enthusiastic bee-man found. Had one hive. Had taken off 30 pounds of honey, and knew the A B C book by heart. Had already figured out what he would do with 50 colonies of bees.

Mr. G. W. is the old style bee-man of the timber. His pastime is hunting bee trees. Has caught all his swarms or reared them from wild swarms. He uses gums and the old box-hives. Has had no moth or disease that he knows of. Mice have bothered him. Has 10 hives, and got 18 or 20 gallons of honey this year. He advises all to keep bees.

Mr. M. F. R. has no bees at present, but knows all about them. He bought his colonies at a public sale because the auctioneer was eloquent and the bees cheap; paid 75 cents a colony for 12 colonies, and \$85 for supplies; lost every new swarm. The bees started a runaway that caused a loss of \$65. That fall he took off 125 pounds of honey. The next summer he had similar luck. The third spring he had only four colonies that were alive. The hogs got into the orchard and upset the hives.

Mr. M. purchased two stands in new hives with supers from a bee firm two years ago. He placed all the supers on the hives and nailed them there. Has never looked into the hives since that time. He is waiting for the colonies to become strong before taking the honey; expects to take off a large amount next year. If a bee has plenty of room it will not swarm and continue to deposit honey. The easiest way to keep bees is to give them lots of supers and every two or three years take off the honey.

Mr. Mc, living on the next farm, showed me a very fine swarm that came from one of the above mentioned hives in less than a month after Mr. M. placed them in his orchard. This colony gave Mr. Mc 30 pounds the first year and 70 pounds the last year. This man is a very successful beekeeping farmer. He has 15 colonies.

One hundred cases we either interviewed or heard of on good authority. Of that 100, 80 percent failed through absolute ignorance. Of these 80, 20 began keeping bees without any knowledge except that they made honey, and

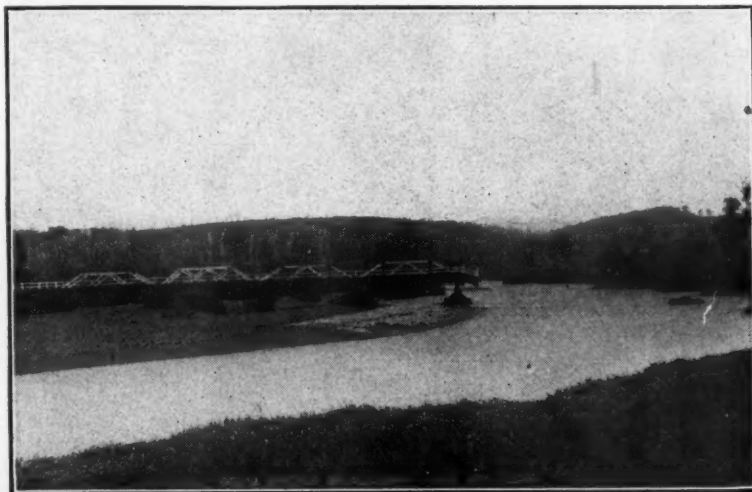
ended in two or three years with the knowledge that bees neither make honey nor pay. One claimed that the birds caught all his bees. Seventeen allowed their hives to be washed away by high water, or burned by fire set out to clean the orchard of weeds, or destroyed by live stock. Two claimed that moth killed out their bees. Five lost part by swarming and sold the rest to "git rid of the pesky critters." Fourteen came into possession of bees through purchase of farms on which the bees were, or through inheritance. Each made the attempt but failed, and now have no bees or only a few straggling colonies, because, to use the expression of one of the parties, he didn't "jest git the hang of it."

The remaining 20 cases were mostly boys or women who started beekeeping because some one else did or they were in hopes of becoming suddenly rich, just like the lady in the story paper. Most of these discontinued the first year. One persisted four years. All of these were pure cases of failure because they knew nothing about bees.

Of the 20 percent, one-half may be considered successful. Eight of the ten so considered themselves. Two of those thought the most successful by their neighbors, did not believe themselves as such, as the sale of honey and excess of swarms did not equal the expense through a period of years.

Of the remaining ten, five are too new to mention, but the owners are well informed and hope to succeed. Three are keeping bees for fun. They take up every new fad and get few results. Two were very indefinite in their reports except that they considered themselves successful.

Now for some explanations and observations. Any one who has attempted to keep bees has been considered a beekeeper except where bees have been taken from cut bee-trees and taken home just to see if they would live through the winter. There seems to be a popular notion that bees hibernate, and if the winter is mild they will live through. Fifteen such swarms are being watched. Of the 15, one was taken from a cut bee-tree where it had been abandoned by the cutter, by a good beekeeper and is being fed.



A WASHOUT IN AUSTRALIA—AUSTRALIA ALPS IN THE DISTANCE  
F. Rayment



Of these 100 parties, 70 still have bees, and 20 have over 10 colonies each; five recommend the keeping of a number of colonies; ten that from two to five colonies are profitable on every farm; twenty that bees are for the specialist, and a nuisance for the common man. About 3 percent had heard of bee disease, and one party had seen it.

To sum up the causes of failure it was because the would-be beekeeper did not know of the whys and hows of the bee trade. One did not know how to buy supplies, another how to handle the swarms, another how to sell honey, another where to place the hive, and so forth. All were *not* inclined to study the subject, for everybody has sense enough to keep bees. All those that have succeeded are men who have studied the cause of former failure and keep in tune with the bees and other bee-men, are enjoying their labor and the sweets thereof.

The lack of preparation was everywhere apparent. Those who were most successful were the most forehanded, and many a failure was caused by a lack of preparedness. If the materials are well cared for, the tools in their places, no time will be lost, no stings will have to be picked out; in fact, preparedness is the key to success in bee work. Let the slack time in winter be filled with preparation for next summer's work and not in theorizing on what we could do if we had 100 colonies of purest Italians in an eternal clover pasture or similar foolishness.

Albany, Mo.

## Vaseline to Prevent Burr Combs—An Old Idea

BY ARTHUR C. MILLER.

IN the Bee Journal for January, page 12, a Mr. Oettle is reported as suggesting the use of vaseline to prevent burr combs, and says that "all exposed parts of supers, etc., should be vaselined on the bottom edge."

As far back as the early eighties, James Heddon mentioned the use of tallow for such purpose, and if memory serves me truly the use of a grease of some sort to prevent sticking by propolis dates back over a hundred years, though at the moment I cannot quote the author and place.

For a season I used tallow thus, and particularly on the edges of the end-bars of my closed-end frames, but I early discovered that there were worse evils than the sticking together of hive parts. Today I stop and scrape the edge of an end-bar at some time greased or send into the shop for cleaning, a super or other article at some time treated to a dose of antistick.

It is exceedingly disconcerting to have a previously decorous and well-ordered super go sliding off onto the ground at the slightest touch of hand or breeze, as the greased ones will sometimes do on a nice hot day. The grease and the propolis mix and make a very good lubricant when the temperature is up.

Another drawback to the use of grease is the daubing of one's hands, tools, smoker, etc., until nothing can be held securely. There are some things much worse than propolis and

burr combs. An annual "clean up" keeps the former within bounds, and a change of queen will eliminate the latter.

One of the advantages of a library of old bee books is the knowledge to be gained of the practices of those who preceded us, thus either saving us useless experiments or furnishing us with some good or forgotten method or telling us the true originator of some "modern" usage.

Providence, R. I.

## Queen-Rearing—Combination Method

BY J. E. HAND.

THE queen is the mainspring of the existence of the colony, and the pivotal point of successful beekeeping; requeening to prevent swarming is rapidly gaining favor, therefore, the knowledge how to rear good queens is a necessary qualification of a competent beekeeper, without which he is not a complete master of his profession. The methods of queen-rearing

from one side of said strips down to the septum, fasten said strips to the cell bars with melted wax. Crush the eggs in alternating cells, leaving the cells containing eggs alternating and zigzagging in the rows, and place the bars in position in the frames.

This frame containing strips of prepared worker-cells containing eggs, is placed in position in the queenless colony, between the two combs of honey, after removing the frame of brood. This sudden relief from hopeless queenlessness is hailed with great rejoicing, and the queen-rearing impulse is developed to the highest pitch. The nurses recently deprived of their numerous nurselings, will have their stomachs full of chyme, the cells containing eggs will be enlarged and the tiny larvae will be treated to a superabundance of food as soon as they emerge from the egg. If no nectar is available queen-rearing colonies should be fed a pint of syrup daily to rear these queens.

There are good reasons, however, why these queenless colonies should not be allowed to finish the cells, (1) there are too many for one colony to finish if the best queens are wanted.



THIS IS QUEEN-REARING TIME IN THE SOUTH

A batch of queen-cells ready for nuclei, in the apiary of Grant Anderson, of Texas

in vogue today are largely modifications of methods introduced by G. M. Doolittle and Henry Alley a quarter century ago. Since space forbids a specific definition of these methods, suffice it to say, "in rearing queens for home use when simplicity of equipment and manipulation are important factors, a combination of the two methods mentioned has its peculiar advantages."

The equipment consists of a brood-frame in which removable cell-bars are fitted parallel with the top-bar, and 1½ inches apart. Place a clean empty comb in the colony having the breeding queen and examine it daily. When it is well filled with eggs remove the queen and combs from a strong colony, leaving two combs with honey and one with brood. Cage the queen, shake the bees onto the running-board, place the caged queen and beeless brood in the top story of a strong colony, above a queen-excluder, and proceed as follows: Remove the comb containing eggs from the breeding colony, slice it into strips lengthwise, with two rows on each strip. Shave the cells

(2) The absence of nurselings will cause a decrease in the secretion of chyme by the nurses, and it is imperative to get as many cells started as possible before the secretion of chyme reaches the minimum; therefore, queenless colonies are employed to start cells which are finished by queenright colonies. As soon as a batch of prepared cells have become well started and liberally supplied with food the frame is removed and another frame of prepared cells given, never allowing a queenless colony to start more than three batches, for reasons just given. The queen and brood are then returned, and the short period of queenlessness will not cripple the efficiency of the colony.

Auxiliary queenright colonies are prepared to finish embryo queen-cells in the following manner: The strongest colonies are selected and the queen limited to the lower story by a queen-excluder, with the most of the brood in the upper story. In the center of the upper story we place a frame having a bar with 15 embryo queen-cells attached. When these are finished another batch



is given; this may be repeated so long as warm weather continues.

This method is simple and practical, and will produce high quality queens. It has been ascertained that the food given to all larvæ during the first three days of their life is the same whether said larva is cradled in the gilded cell of royalty or in the humble cell of a common worker, also that during these days of grace a larva in a worker-cell is given more food than it can consume; therefore, to all external appearances it could not fare better if hatched in a queen-cell; therefore, it is claimed that if a larva less than three days old is grafted from a worker-cell into an artificial queen-cell it will produce just as good queens as though the larva had hatched in the queen-cell.

At first sight this seems like sound logic, but there is an abnormal side to the grafting problem, that cannot be ignored. Under *natural* conditions a queen-cell containing a larva three days old is a perfect queen-cell in form and feature, and is nearly full size; therefore, bees are not pleased with three-days old larva in an open mouth wax-cup bearing little resemblance to a queen-cell with a royal larva at any age, and such a poor counterfeiter is viewed with disfavor and robbed of the food so skilfully (?) provided by the grafter, and the neglected larva is left with no visible means to sustain life until such time as the bees see fit to accept the intruders. On an average, half of the grafted larvæ perish outright from starvation and neglect, and certainly the survivors are not benefited by their period of semi-starvation. The weak point in grafting is the period of fasting immediately following, at a time when the royal larva should be floating in a superabundance of food. Bees are more competent to select larvæ of the proper age to rear good queens, than the most expert grafter.

Birmingham, Ohio.

## Certain Hive Fixtures

BY F. GREINER.

**T**O practice economy in bee-fixtures at the expense of efficiency or neatness is a poor way to save or reduce expenses. I am afraid many of us are making mistakes along this line, some here, others there. For instance, the use of No. 2 sections cannot be generally recommended. Perhaps they may be admissible when honey is to be cartoned in sealed enclosures. I know of beekeepers who use old stained, yes, even dirty boxes of previous years use. I have found them time after time in country stores. How bad they look! How much better a clean white box of honey appears by their side!

One of the things of great importance in the production of comb honey is that we produce honey which does not leak. Any fixture producing or accomplishing this object is to be preferred even if it should cost a little more than the one having a tendency in the opposite direction.

For half a life time I have used differently constructed section supers alongside with another; not one kind one year, another kind another year; no, I tested them in the same seasons,

in the same yards; even different supers on the same hive at the same time, and, while I have found several different supers to give reasonably good results, nothing has given me the satisfaction that a real wide-frame super affords. This, however, is not what I started out to say. I intend to confine myself to the greater detail, the separator; for whatever the style of super selected might be, the divider or separator remains the same *almost in all* cases. I am referring here to the wire-screen separator and the old tin or plain metal separator, otherwise the wood separator has long become the popular fixture.

It is all right even from the standpoint of the bee which does not take as kindly to metal as wood. The latter is more congenial to the nature of the bee because of its being a better non-conductor of heat and cold than metal is, the material the bee has adapted itself to during untold unknown ages. This wooden separator has from time to time been changed. Some have used a simple plain thin board and are continuing its use; others have perforated it, some cleated it, and still others have made a cleated fence. As long as a plain board was used all went well providing same was of proper width. I have used them as wide as the section was deep, and thus produced perfect non-leaking honey combs, but in this case the sections had a deep beeway. When the beeway is only  $\frac{1}{2}$  of an inch deep as in case of the no-beeway section when the thickness of the cleat represents the beeway, the separator must be narrower than the section is deep by  $\frac{1}{2}$  inch in order to give the bees free access to the sections.

When first using separators we were not so very particular about this matter, and some we made were about  $\frac{3}{4}$  inch narrower than the outside dimensions of the boxes. The result was that the cells in the lower row as well as those in the upper row were drawn out and extended beyond the wood, necessitating trimming them down before crating, producing a leaky mess. It has been a dear lesson to us to find that separators should not be perceptibly less than  $4\frac{1}{2}$  inches for the 4x5 tall section. When we adopted fences the tendency to produce leaky section honey was also increased in as much as the bees sometimes start little legs from the edges of the little fence boards to the face of the combs; besides the honey produced with fences has not unfrequently a washboard appearance, particularly so when they have been in use for a few years. For these reasons I prefer the solid smooth board as a divider to the fence or even the perforated separator. The smoother the surface of the separator the surer we are of good results.

The cleat was added to the separator in order that we might use no-beeway sections. It was a delicate matter to decide what the width of this cleat should be. They were tried quite wide,  $\frac{3}{4}$  and  $\frac{1}{2}$  of an inch, I think. I have them in use today. Finally the other extreme was adopted, viz:  $\frac{1}{4}$  inch wide. Many thousand fences with these narrow cleats are found in the bee yards of today. Do they give satisfaction? What do we find anyway? In good honey seasons, when clover and other blossoms yield nectar profusely, and when the combs are sealed clear to the

wood, as it seems desirable, the sealing becomes attached along the edges where the cleat is, not merely to the wood of the section, but also quite often to the cleat, too. When the filled section is removed from the holder this capping is torn loose and we have a bad leak. When the wide cleat is used the bees respect it and build around it, never attaching the capping to it.

The surface of the comb shows a slight depression to match the cleat. It might appear as though the edge was beveled off, which is not nearly as much of a disadvantage as the effect the narrow cleat produces. This disadvantage, this depression of beveling may be reduced to a minimum by reducing the width of the cleat, but we must not go beyond a certain limit. A cleat 9-16 inch wide gives good result and at the present I consider that width the limit. Possibly the  $\frac{1}{2}$ -inch cleat is safe to use, but this I do not know; we will do more experimenting on this point, for we want the cleat as narrow as possible. I have decided to drop the beeway section entirely, and I have been asked, "Why use the no-beeway section at all?"

Briefly I will answer this question: "On account of economy." We save time in cleaning or scraping the sections when filled; we save money when buying the sections; we save one-seventh of the shipping-cases. There is no difficulty in handling honey in no-beeway sections, not in practice anyway.

Naples, N. Y.

## Manipulation of Bees

BY L. HASEMAN.

(For beginners.)

**T**O the beginning beekeeper, his first attempt to open the hive and handle the combs and bees may be beset with some difficulties, but in time this becomes the most fascinating part of beekeeping. He must study the bees, their habits, nature, likes and dislikes, and then accustom himself to their ways. The honeybee is not a vicious creature, and if given anything like the consideration it deserves it will not fight.

While handling bees, avoid jarring them or making any quick nervous motions. These two mistakes will start trouble in any bee colony. Always wear a veil to protect the face, and use cool smoke sparingly at the entrance and under the cover as it is being gently raised. Use smoke to induce the workers to fill their stomachs with honey, after which they are less likely to sting. Avoid pinching bees between your fingers, as they resent such careless treatment. For best results select the warm part of the day when the workers are actively gathering nectar or pollen, for at such times there are fewer bees in the hive, and those present are more docile. Never open the brood-chamber when the weather is cold, if it can be avoided, for you are apt to chill the queen and the brood.

These are few of the do's and don'ts which the beginner beekeeper in particular should keep in mind. A little careful study of the bee and its life and habits, and a little effort to adjust one's actions to those of the bees will soon make beekeeping both an interesting

pursuit and one of value to those who are willing to work and learn. Every farmer could produce his own supply of honey by keeping and properly caring for a few colonies of bees.

#### SELLING HONEY.

Honey is a product of the farm which will practically sell itself if it is properly prepared for the market. The marketing of a small surplus is a simple matter. Let your neighbors know you have the pure unadulterated article and they will be glad to relieve you of your surplus. The marketing of a large crop may not be so simple, as you may have more than is needed for your immediate neighborhood or city market. For disposing of large surpluses, advertising in newspapers and otherwise will increase the demand from cities and from a large country district. One Missouri beekeeper, this season, had 30,000 pounds of honey which he marketed largely in his own county, and he says he could market much more if he had more good white clover honey. White clover honey is our most important honey crop, and it usually sells more easily than the darker honey.

Columbia, Mo.

## Results of Apiary Inspection

BY E. F. PHILLIPS.

(This is the second of the papers read at the New York meeting of officials in charge of beekeeping. Mr. Pellett's paper, "Problems of Bee Inspection," appeared in the March issue.)

THE inspection of apiaries in the various States is unfortunately conducted according to many different systems, and in some cases with little apparent system. This work cannot be cast in a mold, because of the wide divergence of conditions in the various beekeeping regions of the United States, but it would seem possible to standardize the work to some extent by discussions in this association and elsewhere. To show the divergence more clearly, some of the differences in plans may be mentioned. In

some States it is the policy to do intensive work by attempting to visit and advise all the beekeepers in a locality before the inspector leaves; in other cases inspection is made only on request, and only a few beekeepers are visited on each trip from the central office. In some cases emphasis is placed on work with the individual beekeeper; in other States meetings and demonstrations are held to reach a large number of beekeepers. In some States the supervising officer has a bird's-eye view of the situation throughout the State, made possible by adequate records and maps; in other instances the inspector has no such efficient records and wanders more or less aimlessly about, helping wherever he can but without a broad outlook. To obviate some of the grosser errors, the Bureau of Entomology has advised supervision of the work by an already existing office, not only to save administration expense, but especially to make the work constructive, comprehensive and efficient. The history of inspection proves conclusively the advantage of such a system, and shows the relative inefficiency of an independent inspector.

The title of the present paper indicates a desire to know whether the apiary inspection is profitable. At the request of beekeepers, the various States are spending thousands of dollars annually in this work. It has been in operation on an ever increasing scale since the first law was passed in Wisconsin in 1897, and enough experience is available to warrant the demand for a showing of results.

If conclusions are based on observations of a general character, one must believe that inspection is a decided benefit. Even in those States where there is little or no system, and where the most careless work is done, we find individual beekeepers aided to better beekeeping and enabled to combat disease with success. The making of one good beekeeper in a country may result ultimately in greatly increased wealth to the State, so that one cannot easily measure the economic value of

such work. In spite of valid criticisms and there is abundant room for criticism in various States, we must conclude from such an examination that apiary inspection is economically sound and that the expenditure is warranted.

But so far the general approbation of the work has been based on just such general observations, without analyzing the situation carefully. It is now well after 20 years of trial to examine at least some of the available data to make the criticism more valuable. Such an examination cannot be made comparative because of the divergent systems just mentioned and often because of lack of available records. It is entirely just to conclude that where intelligible records are lacking the work is least valuable. To analyze all the available data is an enormous task, which cannot be undertaken at present, but a few specimens may stimulate the administrative offices in this work to apply this test, and it is hoped that the analyses will be published. These results should be announced even though the results are not all that might be desired, and if possible the results should be interpreted. This is the type of comparison and tabulation which the author recommended to this section at the annual meeting in 1915.

In the Mohawk Valley, New York, European foulbrood broke out in 1894, but it was not until 1899 that apiary inspection was established, as a result of the efforts of the organized beekeepers. The inspectors made an effort to determine the loss in colonies actually destroyed by disease, and while this record is probably incomplete, they found that colonies valued at \$39,487 were reported lost. In 1899 (the first year of inspection) and successive years to 1904, the loss of colonies that died was given in the 1904 report as follows:

1895-1899.....	\$39,487
1899.....	25,420
1900.....	20,289
1901.....	10,853
1902.....	5,860
1903.....	4,741
1904.....	2,220

When we consider the fact that in



THE EVOLUTION OF THE BEEHIVE EXHIBIT AT COLUMBIA, MO., IN JANUARY—Missouri Apicultural Society



1900 diseased colonies numbering 7253 were found (valued at perhaps \$40,000), it is evident that the disease was spreading with great rapidity, and the State of New York made a good investment in establishing inspection whereby the percentage of diseased colonies was forced down from 23.9 in 1900 to 3.6 in 1905. About that time other outbreaks occurred, but the percent of colonies diseased has remained low.

Perhaps a better but less definite indication of the way in which, through inspection and education, the epidemic has been turned to the advantage of the beekeepers is in a comparison of past and present conditions in the Mohawk Valley. It appears that before the outbreak of European foulbrood there were comparatively few extensive beekeepers in the valley and many uninformed and indifferent small holders. No inspection or educational system yet devised can save the careless bee-keeper, and it is unsafe to attempt too much along that line, but through the efforts of the inspectors and other educational sources, the careful beekeepers and those who would make an effort to clean up the disease were instructed in the diagnosis and treatment, so that today they have little fear of European foulbrood. There are probably fewer beekeepers than formerly, but undoubtedly there are more colonies of bees and the average annual crop is larger than before the epidemic. The epidemic has thus been turned to an actual benefit to the industry through inspection.

In northwestern Indiana, European foulbrood is prevalent, and probably has been present for many years. In the eastern portion of the State, American foulbrood is abundant, and has caused enormous losses. On a brief trip of inspection, which the author took with Mr. George S. Demuth, then chief apiary inspector, but now in the Bureau of Entomology, several apiaries in the European foulbrood territory were found in which every colony was diseased.

In 1909 apiary inspection was instituted in Indiana under the supervision of the State Entomologist. Of the 6036 colonies examined that year 23.7 percent were diseased, and in Porter county 66.5 percent of all colonies inspected had European foulbrood. The highest record for the prevalence of American foulbrood so far recorded is for Randolph Co., Ind., in 1910, where 83.5 percent of the 3000 colonies examined were diseased or dead.

In this State, not only is the percentage of diseased colonies being reduced but the beekeepers are finding out what their trouble actually is, and beekeeping conditions are rapidly improving. It will take strenuous and continued inspection and encouragement to put the business on the footing which it should occupy, but the short time so far spent in the work shows that here, too, the epidemics may ultimately be instrumental in making better beekeepers and thereby be an indirect benefit. The data are not at hand, but Mr. D. W. Erbaugh is responsible for the statement that at present American foulbrood is scarce and the beekeepers in that territory are increasing their apiaries and finding beekeeping profitable. This is the most striking result of the Indiana inspection, even though

no work was done there between 1910 and 1916.

Through the courtesy of Mr. E. G. Carr, of the New Jersey inspection service, I am able to give data concerning the percentage of infection in Salem, Cumberland and Cape May counties, N. J., 1913 and 1915.

In this territory in 1913, there was European foulbrood in 30.2 percent of all apiaries inspected, and American foulbrood in 3.8 percent. In 1915 no American foulbrood is recorded, and European foulbrood was found in 25.9



THE RESULT OF GOOD BEEKEEPING IN MAINE—HOME OF O. B. GRIFFIN

percent of the apiaries. Of course, the percent of apiaries showing the disease cannot be decreased as rapidly as the percent of infected colonies. During the two years the number of colonies increased from 836 to 1136, a gain of 35 percent, which is the true test of efficiency. The plan in New Jersey is to cover a county as completely as possible before leaving it.

In Connecticut, in 1910, there were inspected 1595 colonies, of which 49.6 percent were diseased, and disease was found in 76 percent of the apiaries. Without giving the data for the intervening years, it may simply be recorded that the records for 1916 show 3898 colonies inspected, of which 7.05 percent showed European foulbrood, and 0.15 percent showed American foul-

brood. European foulbrood was found in 18.8 percent of the apiaries and American foulbrood in 1.07 percent.

Obviously changes in inspection policy and the routine methods of the work will influence these figures. For example, in Connecticut, inspection was formerly done only on complaint, and this restriction has been removed. However, from the figure given for these four States there can be no doubt of the economic value of the apiary inspection.

Every effort should be made to improve the inspection service, and this can perhaps best be done by publication of the results of inspection. The inspection must also be improved by discontinuing, so far as possible, the payment of inspectors only for days spent in the work, which too often means for days when they are not otherwise occupied.

The title chosen for this paper may be assumed to be covered by the type of data given, but at this opportunity it may be well to enlarge the discussion by way of pointing out a method of overcoming some present defects. As is well known, the Bureau of Entomology has during the year begun extension work in beekeeping, in cooperation with the regular extension offices. So far this work is confined to the southern States. When it is considered that the value of inspection comes chiefly from the efficiency of the educational feature of the work, it will be seen that, in a sense, extension work is but a continuation of what has been done for years in some States. However, an extension worker is freed from the odium of police power, which is at times a detriment to the inspection work.

Since in perhaps half the States the apiary inspection is below its possible efficiency, and, since without unwarranted interference this cannot well be changed, except by the beekeepers of the State who often fail to recognize the poor quality of the work, it is pertinent to suggest that extension work should replace at least the incompetent



One does not associate extensive beekeeping with the State of Maine. Yet there are many apiaries there. The above is one of the apiaries of O. B. Griffin, of Caribou



rspection, or, if it is possible, supplement and stimulate it.

The future of the beekeeping industry depends in no small measure on the creation of professional beekeepers. Apiary inspection was instituted chiefly to save what already existed and was not conceived as a creative agency. If inspection is to assist in giving the much needed impetus to the industry, every apiary inspector should emphasize the extension feature of his work, so far as his authority will permit, and in addition should encourage and support the extension work which openly assumes the task so long carried unannounced by the inspection. By enlarging the extension work to the fullest extent, we may expect still more satisfying results than those here given.

Washington, D. C.

## How Products of the Hive May Be Increased

BY J. E. CRANE.

IT has been often observed that one hive of bees is much more productive than another, but the reason is not obvious. It is the purpose of this brief article to point out two or three reasons why this may come about. The first and most usual reason is a large population at the right season to gather the surplus. We notice in the "great war" now in progress, the value of large armies, and the advantage they have over the smaller bodies of men. The same is true in the work of the hive. The more numerous the field workers, other things being equal, the greater the yield. So we may set it down as a matter of prime importance to have a prolific queen. But there are other things of as much or even greater importance, the longevity or endurance of the workers is one of them. It is of little value to rear a large number if they die early while in the height of their labors.

We notice a great difference in the age reached by different families of mankind. Some drop out at 65 or 70, while others live on, almost every member to 80 or more years, hale and hearty. The same law appears to hold true in regard to the age of bees, as is easily shown by introducing an Italian queen into colonies of black bees; or by noticing the time a queenless colony will survive after they have lost their queen. It is generally believed among

the more intelligent beekeepers that the average age of worker-bees during the summer months is about six weeks; and the time they work in the field is not far from four weeks. If workers of one colony of bees can gather honey for four weeks while the longer lived bees of another colony can go five weeks, we can readily see why the latter should prove the more productive. If the first colony should produce 60 pounds of surplus, the hive of longer lived bees should produce 75 or even more pounds of surplus honey.

There is another factor of prime importance in the discussion of this subject. It is the constitutional vigor with which the bees of a colony are endowed. It may even include longevity. Any person who has had much experience with domestic animals, and especially horses, must have noticed the great difference in their constitutional vigor and ability to stand up under adverse conditions. One horse may be driven a dozen miles and back, and when you turn it out it will kick up its heels as though it had thoroughly enjoyed the whole drive, while another after having been driven half the distance appears worn out. There is as much difference in the natural vigor of different colonies of bees as in other animal life, perhaps even more. Some colonies will go down in spite of our best endeavors to build them up, while others in apparently no better condition respond and build up with surprising rapidity. This may account for the greater distance some bees fly in search of nectar, and also for the greater productiveness of one hive over another. If the bees of one hive fly over an area whose diameter is three miles, while bees of a more vigorous colony fly over a diameter of four miles their pasturage is nearly doubled, and sometimes the surplus of their hives also. Bees often fly even farther. A friend of the writer introduced Italian bees into his apiary. There was a field of alsike clover  $2\frac{1}{2}$  miles from his yard. He went to see if his new breed of bees would go so far for honey, and much to his surprise found his yellow bees in great abundance; and they were several times as numerous as the black bees of a neighbor whose bees were located only a mile from the clover. The greater vigor of Italian bees accounts in a large measure for their popularity.

It is well for the apiarist to have these points in mind if he would in-

crease the productiveness of his bees. Avoid increase from the weaker hives and plan to get the new swarms, or at least the young queens, or as many of them as possible from the strongest and most vigorous colonies, and those producing the largest amount of surplus honey.

Middlebury, Vt.

## Translations from a Swiss Bee Paper

BY C. W. AEPPLER.

In "Der Schweizerischen Bienen-Zeitung" (Swiss Bee Journal) for December, 1916, I find the following of interest:

HONEY and wax have increased in price in Germany, but in far greater proportion than other food stuffs. It is thought that the reason for the increased price of honey is the lack of cultivated plants yielding nectar. All available land has been put into potatoes, grain, and the like, in order to meet the demands of the war, leaving only honey plants that are growing wild for the bees to secure nectar from. Even the parks, flower gardens and lawns have been plowed up and put into potatoes.

Honey is now selling for six marks per kilo in Germany, which if given in price per pound would be approximately 68 cents per pound. Wax is selling for seven marks and above per kilo, which if given in price per pound is approximately 76 cents per pound. Before the war, honey was selling for 30 to 35 cents per pound, and it is surprising that it has only doubled in price in that country. Before the war most articles of food were cheaper in Germany than in America, yet honey was selling for about three times the price that we receive.

Before the Swiss Science Association in November, 1916, Prof. Goldi presented his new theory on the sex determination of the honeybee. His theory is as follows: All eggs that are laid in drone-cells by the queen are fertilized the same as all eggs that are laid by her in worker-cells. However, after the eggs have been laid by the queen in drone-cells, the workers sterilize them.

This is the third hypothesis that has been set forth on sex determination in the case of the honeybee, and may be said to lie about midway between the hypothesis of Dzierzon and Von Dickel.

Prof. Goldi bases his theory on observations that he made with certain species of ants in Peru, South America. Madison, Wis.

## Long Distance Beekeeping

BY FRANK C. PELLETT.

THERE are hundreds of men who keep bees as a side line and with no very special importance placed on the income from the apiary. There are a few side line beemen whose colonies are numbered by hundreds. For novelty of management and profitable returns we take off our hats to I. J. Stringham, of New York city. Stringham runs a supply business in the city which requires more



A CRANE APIARY IN VERMONT

Losses in the Crane apiaries the past winter under two percent

or less of his attention every week in the year. With a business in the largest city in the world, one would hardly expect to find the owner a very extensive beekeeper. While beekeeping is an exacting business, in that there are a few essential operations which must be attended to at the proper time, it has certainly been demonstrated that the man who has a good working system has more freedom than with any other business giving as large returns on the capital and labor invested.

Although Mr. Stringham is engaged in business in the city, he lives in a suburban community on Long Island, and goes back and forth to his work daily. One small apiary is kept at his home. Three others are kept on the island within easy reach by automobile. He has three others along the Hudson and two more still farther north. His most distant apiaries in New York state are 210 miles apart. In spite of the long distance from home at which the apiaries are located, four of them are run for comb-honey successfully. Not being content with a string of apiaries 200 miles long, the owner has one in South Carolina which is operated with one visit each year.

Long distance beekeeping is an art. The few visits that are made must be timed so as to reach the apiary just ahead of a crisis. Every operation must be planned to make the most of the short time available for work in each yard, to get a maximum of result with a minimum of labor. Of his ten apiaries Mr. Stringham cares for eight personally, while the other two are operated on shares by the men on whose farms they are located.

The South Carolina apiary which is operated with one visit a year is run for bees as well as for honey. Each colony has three stories of extracting combs to which the bees have access through the entire year. The one visit is made at the beginning of the swarming season and most of the bees from every colony are shaken into packages for shipping north for the purpose of making increase, strengthening weak colonies or for sale in pound packages. In this way several hundred pounds of bees are secured each year. Being so much further south than the New York yards the colonies are strong at a time when bees are just beginning to build up in the northern states. After the bees are removed all surplus honey that may have been stored after the visit of the previous year is extracted. When he is ready to leave there is an abundance of room, and since the working force has been removed, there will not be further danger of swarming. The bees usually build up again in time for the fall flow and store a considerable quantity of honey which will be extracted at the time of the next spring visit. Even with this let alone plan the bees store enough honey to pay expenses of the long journey south and shipping the bees north

again, so that the owner nets about five pounds of bees per colony, which makes it a very profitable apiary.

Six or seven visits each year are paid to the New York apiaries. A light automobile makes it possible to reach any of these apiaries with a load of supers within a few hours' time. It is only possible to care for so many in this manner, in addition to other business, by having all comb-honey supers ready in advance. Sections are folded and filled with foundation during the winter months. When the comb-honey apiaries are visited during the honey flow, carriers full of empty sections are taken to the yard, the filled sections taken from the hives and exchanged for the empty ones, and the return trip is made with the carrier full of finished sections. Every possible short cut is practiced.

Outyards for comb-honey production are not common, because of the

ous problem with the extracted honey system. With more than 700 colonies managed in this way, the net returns have averaged better than \$5 per colony for a series of years. Mr. Stringham is not new at the business, having kept bees on a commercial scale for 25 years. Locust is an important source of surplus to the bees on Long Island. The flow usually lasts from five to seven days. Often 30 to 40 pounds of surplus per colony is stored from this source alone. The flow can be depended upon in this locality four years in five.

In order to succeed with a system like this, one must be thoroughly familiar with the essentials of honey production, for a novice would almost certainly fail with such a plan. The returns which Mr. Stringham has secured from so many bees over a long series of years effectively demonstrate that it is not necessary



TRAILER OF WESLEY FOSTER ATTACHED TO FORD AUTOMOBILE

great difficulty of controlling swarming under such conditions. When the first signs of preparation for swarming are noticed in the Stringham yards, a queen excluder is placed between the bottom-board and the body of each hive. This prevents the escape of the queens during the absence of the owner. Neighbors who have hived swarms issuing from these apiaries have been much mystified because they return to the parent colonies instead of remaining in the new hives or boxes in which they are caught. Two weeks after the excluders are placed, every colony which has queen cells is shaken and in due time the brood is returned to it. This plan effectively disposes of the swarming problem in most instances. An occasional swarm will be lost, but the number is not large.

The colonies run for extracted honey are given the usual attention, since swarming is a much less seri-

ous problem with the bees in order to get results. If the operator knows what to do and when to do it, the less fussing the rest of the year the better.

As a means of advertising, Mr. Stringham exhibits at the Madison Square Garden Poultry Show in New York, and at the Boston Poultry Show. These are the two largest poultry shows in America, and thousands of people are in daily attendance. He tried exhibiting at many of the smaller shows, but finally decided to appear at only the two best ones, where he could reach the largest possible number of people. Booth space at the New York show costs \$75, so he has little competition in the way of rival exhibits. It is an advertising proposition entirely, since no prizes are offered for anything aside from poultry. It was at the New York show that I met Mr. Stringham. The first time I passed



through the big building I was attracted to the honey exhibit, which was very nicely arranged. There was a constant stream of visitors to the honey booth, many of whom bought honey to carry away with them, and many others left orders for later delivery. Since there was no other exhibit of bees and honey, most of the visitors to the show stopped to take a look. By such means a retail trade for a large amount of honey is established, which adds a substantial sum to the income from the apiaries.

## Alsike Clover as a Honey Plant

BY C. H. PAMMEL.

At the recent meeting of the Iowa beekeepers in Des Moines, the writer made the statement that alsike clover was somewhat overestimated as a honey plant, at least so far as Iowa was concerned. It is not an important honey forage plant in Iowa. The acreage is relatively small. There are a great many spontaneous plants of it in Iowa, however. But there are much larger areas in Wisconsin, where the soil and climate are adapted to it. It is also perhaps a much more important honey plant in that region than with us. After my return home I looked up our records on its value as a honey plant. I find that it is not visited as frequently as sweet or white clover. The following field notes were made by Dr. L. A. Kenoyer. These notes will be of interest in view of the discussion in Des Moines:

### TRIFOLIUM HYBRIDUM—ALSIKE CLOVER.

Date	Place	Weather	Honey bees	Other insects	Observer
6-16-14	Campus	Clear, cool SE	{ Fewer than } on white	Numerous	Fazier
6-17	Street	" " "	Many	"	"
6-18	"	" warm 70 deg.	{ A few after } 7:30		Munger
6-19	"	Cloudy, cool N	None		"
....	"	Moderate, S	Plentiful	Andrena plentiful	"
1915	Campus	{ Cool, wet } { summer }	{ Bees rarely } observed on alsike		Kenoyer

Although our observations indicate that alsike is less visited by bees than is white clover, its corollas are but slightly inferior to those of white clover in the amount of sugar contained.

The insect visitors are very similar in kind to those of white clover, flies and hemiptera being frequent.

Alsike differs from white clover in having ascending rather than prostrate stems, and in the generally more decided pink tint of the flowers which may be distinguished also by the absence of the purple spots at the sinuses of the calyx—these spots being characteristic of white clover.

Ames, Iowa.

[Alsike clover is found quite frequently growing in pastures in the East, New York and New England. It has become a volunteer there as white clover is with us. The beekeepers of the East and Canada secure much honey from it.—EDITOR.]

## BEE-KEEPING FOR WOMEN

Conducted by Miss EMMA M. WILSON, Marengo, Ill.

### Queen-Rearing

I want to know the best method of rearing queens for my own use. I live on the farm. I have had some experience with bees, but have never had any with queen-rearing.

I have five colonies in 10-frame hives, two in eight, and three in log hives. I want to transfer my bees in log hives and requeen them. My bees in the hives are 3-banded Italians, and those in the log hives are blacks. I left on a super full of honeydew and amber mixed. They had some honey in the brood-chamber, but I do not know whether they had enough to winter on. Did I do right?

[MRS.] W. B. ROBINSON, SR.  
Defeated, Tenn.

So much depends upon the queen that it pays well to take a great deal of pains to rear the very best. At least up to the time when a queen-cell is sealed it should be in a strong colony, and the colony should be in the pink of condition, with abundance of honey coming in, so that the royal larvæ shall be lavishly fed. Don't try to rear queens too early. They are likely to be poor. Wait until the time when bees swarm naturally. Indeed, one of the best ways is to use what are called swarming-

legs  $1\frac{1}{2}$  inches or so apart. Let one leg of the staple hug down upon the cell, and push the other end into the comb. In about two weeks look in your nucleus, and if all is going well you ought to find a young queen laying.

It was all right for the bees to have the honey left for them, except that in some cases, if not generally, honeydew is not the best for winter stores. But if the honey was in sections, although good for the bees the sections would not be good to use again.

### A Beginner

Will you please give me some information on how to care for bees. I want to know enough to keep them.  
Gravity, Iowa. ETHEL V. RAY.

The care of bees is the same whether you desire to produce honey for market or for your own use, just as you would raise potatoes the same way whether you intend to eat them or sell them.

It is an impossibility in a single reply to tell all about the care of bees. There are, however, good books written purposely to give the instruction you desire, such as "Dadant's Langstroth" and Root's "A B C and X Y Z."

Perhaps you can hardly do better than to send \$1.75 to Dadant & Sons, Hamilton, Ill., to get the American Bee Journal for a year and with it Dr. Miller's "Thousand Answers." This book contains the cream of the replies given by Dr. C. C. Miller during many years to all sorts of questions about bees, questions asked largely by beginners, yet many by those with experience, so that you will hardly fail to find in it the answer to any question that may come up in your work.

You may, however, not think it worth while to go to even that much expense. Well, then, about as soon as you see the first clover blossom, seeing you are in a white-clover region, put some kind of a box on your hive to contain the surplus honey; be on the lookout for swarms so as to hive them, take off the box as soon as the honey in it is sealed, and put on another box, and as soon as the bees stop gathering in the fall take off all boxes.

That is exceedingly meager and unsatisfactory, and it would still be meager and unsatisfactory if another page were added to it, or even a dozen pages. On the whole, the likelihood is that if you should make the small outlay suggested you might more than get it back in a single season with a single colony.

### A Unique Institution

The School of Horticulture for Women, located at Ambler, Penn., is unlike any other institution in this country. A two-year course is offered and all students entering are required

cells, that is the cells that are reared for swarming.

Decide which you think is your best queen, or at least one of the best, and and if its colony is not likely to swarm among the earliest, strengthen the colony by giving it brood and bees from other colonies. Then as soon as it swarms and you have hived the swarm you can divide into nuclei the brood and bees that are left in the old hive, giving each nucleus two or three frames of brood with adhering bees. Make sure that each nucleus has at least one queen-cell in the central part between the frames where there is no possible chance that it may be chilled. Generally you will find queen-cells on the edges of combs, but for your purpose that is not so well. If there is no cell where you want it, cut one out and put it there, giving preference to the larger cells and those with the deepest indentations. Fasten the cell on the comb with a hive-staple, or any staple with



to take a medical examination to show physical fitness as well as suitable mental preparation. The course is said to be too strenuous for delicate women. As will be seen from the picture of the class in beekeeping, the students are given practical work in the subjects which they are taught. Two hours of practical work to one of books is the rule throughout the course.

The work includes floriculture and greenhouse management, landscape gardening, fruit growing, vegetable gardening, poultry keeping, beekeeping, canning and preserving. In many respects the work resembles that offered in the Agricultural Colleges, excepting that here the students have practical experience in the apiary, greenhouse or garden through the entire year. The jam kitchen is an interesting place where the products of the school farm are prepared for market. Fruits are made into jellies and preserves, and the honey is bottled for a special trade. While there are similar institutions in Europe, there is no other school in America offering this particular training for women.

Miss Elizabeth Leighton Lee, director of the school, says: "The object of the School of Horticulture is to give to educated women scientific instruction, combined with all necessary conditions for much actual practice; the course being planned to equip women with the theoretical and practical knowledge that will enable them to manage private and commercial gardens or orchards. Thorough training throughout the various seasons of the year eliminates the discouragements of costly inexperience, and fits a woman for a vocation that is healthful, attractive and remunerative." F. C. P.

One who has any proper conception of the subject cannot help being thrilled to think what it will mean to the country when schools of this kind become common—as they surely will. A woman who has been through a two-year course at Ambler need have little to fear in meeting life's struggle if she should be thrown upon her own resources.

Yet important as it is that those women who live lives of single blessedness shall be prepared to steer their lone barks, it is of vastly more consequence that married women shall do their part well, if for no other reason than because there are so many more of them. It is a great thing to be a *home-maker*. Lillian Russell, the noted opera-singer and actress, lately wrote in the Chicago Daily Herald:

"Women who are making good homes need not feel that their work is insignificant; they are engaged in the greatest work life offers. Their sisters may paint beautiful pictures, write wonderful stories or rise to exalted positions in business or the professions; but the home builder is, after all, the greatest producer of beauty and happiness. All else in life is in a large measure dependent upon her. Government may fall and religion may totter if she fails in her duties.

"Women who create beautiful homes can find time for other things; their lives need not be narrow. Many channels to success in other directions are open to them. They have a better chance to reach exalted positions in their communities and nations than the

women who have never felt the wonderful exhilaration and inspiration of the home builder.

"Man may erect a building, but it takes a woman to make it a home. It is a woman that puts the wonderful sweetness in the word home. She is the creator of the beauty and happiness

that convert a dwelling place into a home."

So let us rejoice that Ambler women are being prepared to make better homes, and that the vision is broad enough to include beekeeping as one of the things the home-maker may well know something about.

## MISCELLANEOUS



## NEWS ITEMS

**Suggestions for the Control of Foulbrood.**—The following gleaned from the instruction given by B. F. Kindig, State Inspector of Michigan, is worthy of attention:

Very few colonies of bees *actually die* from foulbrood during the summer. The disease causes the colonies to become very weak, and they, therefore, store up very little food for winter. If they do not starve to death sooner, or are not killed by robbers, the first real cold weather usually kills them. These conditions cause many beekeepers to look upon the death of their bees as purely due to winter killing. In a large measure winter killing is due to disease.

From now on until late spring, every beekeeper should look upon the death of any colony with suspicion, watch the hives on warm days, and if the bees are flying from some hives and not from others, take the hive from which the bees are flying, inside of a building and there make an examination of the interior. If the colony is found to be dead or nearly so, do not again place the hive where it can be robbed, but suffocate the bees and close the hive securely. Any colony that is being robbed may be a source of disease, which disease may be carried to all the healthy colonies in the vicinity.

Any beekeeper who is not familiar with the appearance of combs in which disease is present should send a piece

of the comb under suspicion. A box for mailing will be furnished, if desired. No charges are made for the examination of the comb. If disease is found to be present, specific directions for disposing of the combs, and for treating the disease in living colonies, will be sent to the person sending in the combs for examination.

If beekeepers will heed the above suggestions, it will prevent in large measure the further spread of foulbrood.

E. F. PHILLIPS,  
Bureau of Entomology, Washington, D. C.

**Ohio Beekeepers Meet.**—At the meeting of the Ohio Beekeepers' Association the following officers were elected: President, Melville Hayes, Wilmington; Vice-president, Fred Leininger, Delphos; Secretary-Treasury, Ernest Kohn, Grover Hill.

A field meet will be held at Wilmington the latter part of August.

**Western Washington Meeting.**—Success attended the annual convention of the Western Washington Beekeepers' Association held in Chehalis Feb. 9. Southwest Washington was well represented.

N. P. Welson, of Centralia, was elected President, and W. L. Cox, of Elma, was re-elected Secretary-Treasurer.



THE STUDENTS ARE GIVEN PRACTICAL INSTRUCTION IN THE SCHOOL OF HORTICULTURE

N. B. Coffman welcomed the delegates to the city and made a short talk on the bee business as a profitable enterprise.

Dr. J. T. Coleman, whose subject was "The Value of Bees to the Agriculturist," explained that the bee business required a great deal of painstaking work. He also pointed out that the little honeybee is the principal agent in cross-pollinating flowers. Dr. Coleman is part owner in a 48-acre pear orchard.

A. S. Cory made a talk on the "Commercial Value of Bees," and urged the beekeepers to improve their stock as well as their product.

W. L. Cox, of Elma, spoke on "Marketing Honey," of which he sells several tons each year, nearly all in his own county, direct to the grocers. He does all of his own delivering with a Ford car; he has a pennant across the wind shield reading, "Eat Honey." This pennant has led to the sale of several cases of honey.

J. W. Ware, the Experiment Station bee-man, addressed both afternoon and evening sessions. Mr. Ware is a beekeeper of many years experience, and gave those present the benefit of his successes as well as his failures.

W. L. Cox, Sec.

**The Arkansas Valley Beekeepers' Association** will hold its spring field meet at Nickerson, Kan., May 12. Every effort will be made to make this meeting a good live one.

J. L. PELHAM, Sec.

**Death of a Texas Beekeeper.**—M. M. Faust, of Wilson Co., Tex., one of the best known beekeepers in the State, died in San Antonio Feb. 21, aged 80 years. He was born in Mississippi, and was for over 30 years identified with the bee business of Texas, having acted for many years as foulbrood in-

spector for Wilson county, and did more perhaps than any other man in the State to lead in the fight for the eradication of this scourge.

Mr. Faust was always a large beekeeper himself, and was among the first to adopt and advocate new methods of bee-culture. Early in the history of Texas beekeeping he imported and bred Italian queens and induced his neighbors to assist in driving out the inferior native races.

E. G. LESTOURGEON.

**Toronto Field Day.**—The 6th annual Field Day of the Toronto Beekeepers' Association will be held at Guelph on May 24. The object of these field days is to educate the beekeeper by practical demonstration in the apiary to better and improved methods of beekeeping. The Field Day demonstration for this purpose is ideal.

Under the splendid management of the Provincial Apiarist, the Ontario Agricultural College is taking the lead

in things apicultural. It goes without saying that the program will be first-class. Mr. Pettit with wide experience in such matters is in charge of this department, and we are confident all who are fortunate enough to be present will go away delighted.

G. R. CHAPMAN, Pres.

F. TEMPLE, } Sec'ies  
C. V. CLUBB, }

**An Advertising Idea.**—During the coming summer I shall try out this idea. I shall have some friend in another State to remail me a letter envelope addressed as follows:

BONNEY HONEY

Dr. Bonney—King Bee

The mail clerk supplying the right address will receive a can of Bonney honey as a free gift. IOWA.

That is all. Is it a good idea? Go thou and do likewise. DR. BONNEY.

## DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to  
DR. C. C. MILLER, MARENGO, ILL.  
He does NOT answer bee-keeping questions by mail.

### Trouble With Bee-Moth

How can I get rid of the bee-moth?

OKLAHOMA.

ANSWER.—You will have no serious trouble with the bee-moth if you will keep Italian bees and have your colonies strong. Even blacks or hybrids, if strong, are not likely to be much troubled.

### Unripened Honey

1. What causes honey to flow from the hive late in the fall and winter, and what can I do for it?

2. Which is better to use, the 8 or 10 frame hive?

MINNESOTA.

ANSWERS.—1. It often happens that moisture from the bees condenses on the walls of the hive and runs out at the entrances, and this may have been what you observed. It is possible, however, that there may have been some thin, unsealed honey that ran out of the cells. Try to have well ripened honey for winter, and see that hives are well packed.

2. In most cases the larger hive is the better.

### Transferring Bees by the Pound—Bees' Wings Injured

1. I have 11 colonies, two are in old log gums. I want to take them out in the spring. My bees are mostly the leather-colored Italians. Would you advise transferring bees from old log gums before they swarm or after?

2. Would it be advisable to order bees by the pound in this part of the State, and will the 1-pound package increase to good colonies during the summer?

3. Just after bringing home a swarm of bees in an old log, some bees began to come out and fall down on the ground. Some would have both wings off while others would have one wing off; some with the ends of the wings off. The bees looked as if they had been scorched; they seemed to be healthy in every other way. What do you think the trouble was?

VIRGINIA.

ANSWERS.—1. The tendency nowadays is to wait until they swarm, hive the swarm in

a proper hive, set it on the old stand with the old hive close beside it, and 21 days later, when all worker-brood has emerged, break up the old hive.

2. Much depends upon what you can do in the way of buying near by in full colonies. If you can buy them for less than \$5.00, that may be better than to get bees by the pound. If you have to send off, then buying by the pound is likely the best thing, preferably getting a queen with your pound. It's asking a good deal to have a pound build up to a strong colony, but if the year is favorable you may compass it. On the whole, however, it may pay full better to get a 2-pound package. It ought to build up more surely in a poorer season, and in a good season build up in less than half the time, and in a very good season it might give enough surplus to more than pay for the extra pound.

3. I should say they might have been scorched, if there was any chance for that; otherwise it might be that the larvæ of the bee-moth may have gnawed off their wings while they were in the cell.

### Swarm Prevention—Ventilation

1. I now have five colonies and one good Italian queen. How would it work to wait until they are preparing to swarm, then kill the old queen and cut out all cells but one, fill that with royal jelly and put a larva from my best queen in it, and then keep all cells cut out but that one? Would that prevent swarming or would it leave them queenless too long?

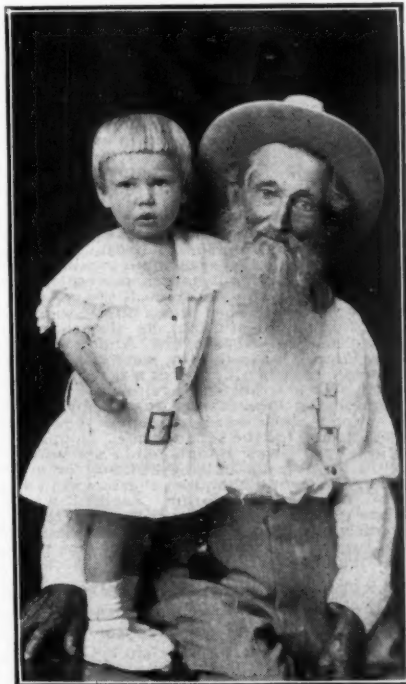
2. Is it a good plan to put in one-inch blocks under the corners of hives in hot weather, leaving one-inch space all around, or would it be better to have an opening only in front?

3. Would it be a good idea to raise the cover about 1-16 inch all around?

4. I have five supers full of partly drawn combs and a little honey. Would it be a good plan to put them on in fruit bloom and leave them until the clover comes, or should I wait until the brood-frames are all filled?

SUBSCRIBER.

ANSWERS.—Your plan may work all right,



THE LATE M. M. FAUST, OF TEXAS, WITH HIS LITTLE GRANDSON.



but you will need to watch closely or the bees will start cells in places you will miss. You will not need to fill a cell with royal jelly; merely pick out the larva and put in the other larva. It may be well for you to prepare several cells, for fear the bees destroy the larva, then before the cells are sealed destroy all but one of the accepted cells. No swarming ought to result; and the interim without a laying queen would be increased about ten days.

2. The opening all around gives better ventilation than the opening in front, but it is somewhat unpleasant to work at a hive where the bees can come out at the side.

3. Yes, only so small a space would in many places be filled with glue, especially late in the season.

4. It will be all right if the colonies are strong and the supers contain extracting combs, but not if they contain sections.

#### Bees and Other Pursuits—Bees in Buildings—Clover Seed

1. What crops or rural pursuits fit in with bee-culture without interfering with care of bees?

2. When a second story of building is used for bees can the colonies be set about the room as when out-of-doors, only facing windows, or must each have a separate outlet?

3. Is raising clover for seed a profitable and sure crop? What kinds should be sown, taking bees into the plan?

4. What kinds of annual bee-forage plants are best which yield a crop of its own?

5. How best to construct an inlet through building for bees? WISCONSIN.

ANSWERS.—1. Small fruits and poultry fit in well with bees.

2. Each colony must have its own outlet.

3. In some places it is, in some places not.

4. Sweet clover, alsike clover, and raspberries are among the best.

5. The simplest kind of a passage made with plain boards.

#### Miscellaneous

1. Is there any profit to be made in a strong colony of bees in a box-hive at 50 cents per colony, to unite with bees in patent hives?

2. Do you think beekeeping could be made a success in this country, as we have some white clover, goldenrod, white aster, black locust, Spanish-needle, and some few other nectar yielding flowers?

3. How much cheaper can a man produce extracted honey than comb? KENTUCKY.

ANSWERS.—1. I can hardly think of any case in which a strong colony of bees in a box-hive would not be a bargain at 50 cents, no matter which way you would use it.

2. Yes, indeed, I have no doubt you can make it a fine success.

3. Estimates vary. Some say you can produce twice as much extracted as comb with the same outlay, some say very little more. Generally, it is believed, that 50 percent more can be produced.

#### Division-Board—Linn Trees—Clover

1. What is the use of the division-board in the 8-frame hive?

2. Should it be put in the middle of the hive?

3. Are the linn trees very good honey trees?

4. How much honey will one tree yield?

5. Would sweet clover planted along the roads and ditches be much of a benefit to bees? IOWA.

ANSWERS.—1. The principal use of the dummy, sometimes called the division-board is to make it easier to lift out the frames.

2. It should be at one side of the hive, although in hot weather it works all right in the middle of the hive.

3. The linden or linn is the same as the basswood, one of the very best honey-trees that grow.

4. I don't know; a big tree yields more

than a little one. I have seen it estimated that a large tree would yield all a strong colony could gather. I have my doubts.

5. Yes; it often blooms when little else is to be had, and is then of great value.

#### A Start With Nuclei

1. How can I put a two-frame nucleus with a queen into an empty hive?

2. Will it make a swarm large enough for a hive?

3. Where can I get a book on bees that would contain such information for the above question?

4. Would bees shipped from southern Texas do all right here?

5. Would a 2-pound package of bees with a queen be sufficient bees for an empty hive?

6. How should they be put in?

7. In running for comb honey, should each frame have a starter? NEBRASKA.

ANSWERS.—1. I simply lift the frames out of the nucleus hive and set them in the hive. A few bees are likely to remain in the nucleus hive, and these you can brush in front of the hive, or else set the nucleus hive in front of the hive and let the bees run in.

2. If the season is good enough, a 2-frame nucleus started sufficiently early ought to make a good colony for winter. In a poor season, hardly.

3. Send for prices on bee books to the Bee Journal. That is an encouraging question, for a man who has no book to guide him is likely to make a lot of rather expensive blunders in keeping bees. I am not anxious to interfere with the circulation of the American Bee Journal, but I would not advise any one to subscribe for it instead of buying a book. After the book, then a good bee journal is a great help.

4. Yes.

5. Yes, if the season is good enough and long enough.

6. It doesn't matter how, so you get them into the hive. You may jar them into the hive, or you may set the package inside the hive, trusting the bees to come out and crawl upon the combs or frames, provided you can furnish them a frame of brood, which you may remove a day or two later if you wish.

7. Yes, and it is costly business to furnish a starter only, for if the frames are not entirely filled with foundation so much drone-comb will be built that it will make you considerably short on honey.

#### Buying Bees by the Pound With a Queen—Wintering, Etc.

1. I subscribed for the American Bee Journal and a queen for \$1.60. If I order a pound of bees from Dadant & Sons, could the queen from the Bee Journal be sent with this pound of bees?

2. I have six drawn combs with some sealed and some unsealed honey for the other four frames. I shall use full sheets of foundation for starters. Will one pound of bees build up a strong colony on this?

3. I winter my bees outdoors, two colonies in a box, with heavy roof paper all around the box and six inches of leaves for packing all around the hives, with one square inch entrances. Is this the best way to winter bees outdoors?

4. Today many bees are flying, and some drop on the snow and die. Can this be prevented?

5. I have four colonies and do not want to increase. If a colony should swarm and I have the swarm in a new hive and put the parent colony with it, would it be liable to swarm again? IOWA.

ANSWERS.—1. Yes; and it's a very nice way to get the queen, avoiding the risk of introduction.

2. That depends. If obtained about the time of fruit-bloom, in an extra season, you may have a strong colony for winter. If the season should be very poor, it may need feeding to get them ready.

3. Your plan is good, and if your bees have

wintered successfully in that way it is not worth while to look for anything better.

4. Toward spring some bees are always dying off from old age, and it is possible that only these aged bees are flying out. Sometimes, however, younger bees are lured out by the bright sun when snow is on the ground, and fall into it. You may prevent this by shading the entrance with a board.

5. If you unite the old colony with the swarm, giving the brood also, they'll swarm. If you give only the bees, without the brood, they'll not swarm.

#### How to Keep Queen Alive Without Bees

I have been trying to find in Langstroth's book or in American Bee Journal how to keep several queens by themselves during summer or over winter. I have lost several colonies this winter of which the queens were most important. I have also tried the experiment, and expect to continue trying, to keep queens between seasons in separate apartments, and to give some occasionally a needed rest to recuperate and increase life and vitality. Can it be done, and how?

ANSWER.—If you are successful in your experiments in keeping queens over winter without having each queen kept in a colony or nucleus of its own, you will be putting the fraternity under obligation by making known how it is done. The best I can offer is to keep the queen in a nucleus in a hive with a full colony, a bee-tight partition between the colony and the nucleus, or else two or more nuclei in the same hive.

In summer it is easier. A queen may be kept in a provisioned cage with a dozen bees in a warm place or over a colony for a number of days, perhaps two or three weeks. Several queens may be kept in separate cages in a queenless colony, and with more or less success in or over supers of queen-right colonies. When I have a valuable queen whose life I wish to prolong, I prefer to keep her in a nucleus where she may continue laying lightly.

#### Photos on Title Page—Swarming

1. Whose picture is represented on the left and whose on the right of the monogram just above the opening page on bee topics of the Bee Journal?

2. Last summer I had a swarm that settled close by on a tree. I removed the parent colony to a new stand and inserted a new one in place of it, as is the usual custom, and hived the swarm. I then placed the super above them which they had on before they swarmed, and at the bottom they had full sheets of foundation. Five minutes after I could see the field bees going in as if nothing had happened. The sweet clover was just coming into bloom, and this hive was full of bees and the prospects fine.

About three weeks after this I noticed the bees all swarming out of the hive again; they circled about for ten minutes and finally lighted on that same tree. I presume they were clustered in that tree about 15 minutes, when all of a sudden I saw them returning one by one to the hive, until the whole swarm was back. That was a puzzle to me, but I didn't molest them, as they began working the same as ever. About three weeks later I noticed they were taking it easy while bees in other hives were carrying heavy pollen morning and evening.

I concluded something was wrong and that wrong must have happened the day they swarmed for the second time. In opening the super I was astonished to see nothing but drone cells bulging out, and on examining the brood-chamber there wasn't a cell built in the foundation. Seeing it was too late to give the brood to rear a queen, I united them with one of the other colonies. What became of the queen and why was the brood-chamber left empty? ST. LOUIS.

ANSWERS.—1. On the title page of the American Bee Journal the man at the left is Rev. L. L. Langstroth, the inventor of the movable-frame hive. At the right is Charles Dadant, who did a great deal of good by introducing and championing the movable-frame hive in France, as well as by rearing a son, C. P. Dadant, who has turned out to



be the best.....Hold on, Doctor! Can't afford to publish the rest of that!—C. P. D.

2. The trouble began when you gave that super to the swarm. That looked better to the bees than the foundation in the brood-chamber, so they went right up and began housekeeping there. Next time either put a queen-excluder between the brood-chamber and the super, or else don't give the super to the swarm until the queen has made a fair start at laying below, say three days or more.

#### Large or Small Nives?—Swarming

1. I would like some information on bees. A few friends of mine take three, and sometimes as high as six, brood-chambers and stack up on each other, but I cannot see any advantage doing that way. If there is I would like to know it.

2. I use the 8-frame brood-chamber, 12 inches deep, but most of them are 9½ and 10 inches. Which is the best?

3. Would you get a larger swarm from a 12-inch hive than you would from a 9½ or 10 inch in swarming time?

4. I have a few small brood chambers, and as a rule they swarm two or three times during the summer season until they are weak. Can I put on an extra super, take the swarm and queen away and put them back in the same hive, or will they stay, as the swarm is very small?

ILLINOIS.

ANSWERS.—1. In working for section honey you will find it the case in a good season that the bees will be working in 3, 4, and even up to 8 supers before all the sections are sealed in the first super. It is somewhat the same way with extracting supers, and some of our best beekeepers leave all on until the close of the harvest.

2. The larger hive may be the better.

3. The larger hive is likely to give the larger swarm.

4. After they have swarmed it will not work to give them an extra super and return the swarm; they will swarm out again. Still, if you keep returning the swarm each time it issues, after a week or so only one young queen will be left in the hive, and then they will swarm no more.

#### Repairing Combs—Danzenbaker Hives

1. I have some brood-combs that the mice got into and chewed holes in the center of the combs; some are clear through while others are only as far as the midrib. Will it be all right to use them in the brood-chamber this spring?

2. Will you tell me the real need of having a bottom-board, one side being deeper than the other?

3. When my new hives arrived, I found that after I had put them together I had some pieces left; they are a little more than ¼ of an inch wide by ¼ inch thick; some are 16½ inches long and others 18½ inches long. What are they for? I purchased Danzenbaker hives.

4. Do you consider the Danzenbaker hive a practical hive, or had I better get the regular Langstroth on the start and save the changing later.

NEW YORK.

ANSWERS.—1. It will be all right to use them, only you should know that wherever the midrib is gnawed away the bees will be pretty sure to build drone-comb. You can prevent this by using one or more of the combs to cut up into patches to fit in the holes. Or, you can fit foundation into the holes. Let the foundation be ¾ or ⅝ inch larger than the hole, cut away the cells down to the midrib on one side, have the foundation quite warm and soft, and press it down into place.

2. I invented the reversible bottom-board although sometimes another name has been attached to it; my object was to have a deep space in winter that would not be clogged by dead bees, and a shallower space in summer, so the bees would not build down. But I have not used the reversible bottom-board for years, preferring a bottom-board two inches deep for the year around, using a

bottom-rack in summer to prevent the bees from building down.

3. I don't know; perhaps to fill the spaces to prevent the bees getting in behind the frames.

4. I think most beekeepers will agree with me in preferring the Langstroth.

#### Laying Worker

I looked over my bees to find how they had wintered, and found that my best colony had brood in one frame of the super, although there was plenty of room in the brood-chamber.

This brood was raised and capped like drone-brood, but was in worker-size cells. One cell had three eggs in it. What is the cause of this?

SUBSCRIBER.

ANSWER.—It is either a case of laying workers or a drone-laying queen, and the three eggs in a cell looks like laying workers. Anyhow, if there is no normal worker-brood in the hive, the case is hopeless, and the best thing is to unite the colony with another, preferably a weak colony with a good queen, yet there is a danger that bees with laying workers may antagonize the queen, so the safer way will be to distribute the combs and bees to several colonies. They are probably of little value, being old.

#### Keep Grass Down—Queen Rearing—Queen Introduction

1. I am thinking of covering the ground with several inches of soft coal cinders where I place my bees in summer, and stamp it down smooth and hard to keep the

book upon the subject, "Doolittle's Queen Rearing," and if you care to know how I rear queens, you will find it fully given in my book, "Fifty Years Among the Bees."

3. There is generally some risk about introducing queens, no matter how long the colony has been queenless. Indeed, after the colony has been queenless a long time there is more risk than after the first few days. The queen is generally put in an introducing cage, and the cage may be given immediately upon the removal of the old queen, the bees eating the candy and releasing the queen within a day or so, but it is perhaps safer to wait a day or so before putting the cage in the hive. It may be still better to give the cage as soon as the old queen is taken away, but keep her fastened for a time, planning to have the bees free her not sooner than three days or more.

#### Extractor—Giving Bees Old Combs

1. I keep 12 to 15 colonies of bees, and wish to know if it would pay me to have an extractor? I have the protection double-walled hive, and use a super that takes both the 4x5 section and shallow extracting frame nicely, and I use both, too.

2. I have some brood-frames whose combs have been partly destroyed by moths, and I wish to know how best to use these. Shall I put them into use and take the chances on drone-comb, or cut out the remnants of comb, and put in full sheets of foundation?

ILLINOIS.

ANSWERS.—1. It would probably pay to have an extractor for a less number than 12,



THIS IS THE TIME FOR OPEN AIR DEMONSTRATIONS—HENRY BEHRENS, OF SOUTH DAKOTA, HANDLING BEES FOR VISITORS AT A FAIR

grass from growing. Do you think there would be anything objectionable about it?

2. I have never had any experience with queen-rearing, and would like to try my hand at it another summer for my own yard. What plan do you think best for me to follow in this location—I have 65 colonies?

3. How long is it necessary to have a colony queenless before it is safe to give them a laying queen or a ripe queen-cell?

WISCONSIN.

ANSWERS.—1. I know of no objection, but think the idea a fine one.

2. That's too big a subject to tackle in this department, which is only intended to supplement, but not to take the place of, a book of instruction. Beside what you will find in your bee-book, you can find a whole

unless you produce comb honey exclusively

2. If a frame is less than half occupied with worker-comb, cut out all and fill anew with foundation; if it has not very many holes or patches of drone-comb, fill up these places with patches of worker-comb or foundation.

#### Dividing—Good Bee-Book

1. I am a beginner in beekeeping, and the thing that bothers me is how to divide my colonies instead of letting them swarm. In the March number of the American Bee Journal, in answering a question of how to divide you say, "Take from a colony all but one of its frames of brood with adhering bees, put them in a new hive on a new stand, leaving the queen on the old stand with the

one frame of brood, and fill up each hive with frames filled with foundation." That leaves the new colony without a queen. How are they to be supplied with a queen?

2. You mention a good bee-book, Dadant-Langstroth. Where can I get this book and what is the price?

3. How can I tell when a colony is ready to be divided?

COLORADO.

ANSWERS.—1. You can give the queenless bees on the new stand a queen, or you can give them a ripe queen-cell—a queen-cell from which the queen will emerge in a day or so—or you can leave them to themselves and they will rear a queen.

2. You can get the book from the office of the American Bee Journal. The price is \$1.50, or with the American Bee Journal one year, \$2.00.

3. You will be pretty safe to divide about the time the bees in your locality begin to swarm naturally, and don't divide them until a colony is strong, having brood in at least six frames.

## SPECIAL NOTICE

THE NATIONAL CONFERENCE ON HONEY PRODUCTION

WE call the attention of our readers to the appeals to the beekeepers in these columns for a strenuous effort in honey production and food conservation. A call was made for the consideration of these matters at Washington April 23. The bee editors, teachers, extension workers and supply manufacturers were invited to this meeting on short notice.

The conference drew up a series of recommendations which are given herewith.

Committees were appointed as follows: (1) To obtain an increased allotment of funds for the Office of Bee Culture Investigations for this emergency; (2) To ascertain the available supply of honey containers and to urge the commission which is dealing with this general subject to include honey containers in their plans; (3) To learn what markets are available for exports of honey; (4) To ascertain the supply of paper containers, in case tin or glass cannot be had; (5) To request the postal authorities to permit the mailing of combless packages of bees. These committees began work promptly on the following morning and their reports will be issued as quickly as possible. The Office of Bee Culture Investigations was requested to notify Texas beekeepers of the shortage of bees in parts of the Northwest. Since prospects are poor in Texas it was suggested that many beekeepers could advantageously sell bees to beekeepers in the Northwest.

The meeting also passed the following resolutions addressed to the Secretary of Agriculture concerning the possible increase of honey production:

1. People who have no land may keep bees and produce 50 to 100 pounds of honey from each colony. Thousands are ready to start.

2. The present production of 300,000,000 pounds must be increased at once by at least 100,000,000 pounds to fill the demand, and to five times as much as soon as facilities are available.

3. Every pound of honey (carbohydrate) produced will release one pound of butter or sugar for other purposes of food.

4. With a prospective shortage of sugar a large production of honey is imperative.

5. To bring the 800,000 existing and many more prospective beekeepers to the highest point of efficiency, we ask for the Bureau of Entomology, Division of Bee Culture, a reasonable sum out of the emergency appropriation of \$25,000,000 for the Department of Agriculture. To enable them to extend their work at once in every State of the Union, it would require an appropriation of 4 percent or \$100,000.

(Signed)

FRANCIS JAGER,  
President National Beekeepers' Assn.

G. E. BACON,  
G. B. Lewis Co.

E. R. ROOT,  
Editor of Gleanings in Bee Culture.

A. L. BOYDEN,  
Secretary The A. I. Root Co.

BURTON N. GATES,  
Massachusetts Agricultural College,  
Amherst, Mass.

The American Bee Journal is heartily in favor of the above suggestions and of anything which will increase the production of food articles. We hear from private sources that in many countries the sugar supply is short. Now is the time to urge the most extensive production of honey which it is possible to secure.

## Classified Department

### BEES AND QUEENS.

PHELPS' Golden Italian Queens will please you.

FULMER's Gray Caucasian queens are winners; also by frame and pound.

MINNESOTA bred Italian queens. Virgins, 45c; mated, \$1.00. O. C. Wandrie, Frazee, Minn.

BEES AND QUEENS from my New Jersey apiary. J. H. M. Cook,  
141st 84 Cortland St., New York City.

TRY ALEXANDER's Italian queens for results. Untested, each, 75c; 6 for \$4.25; \$8.00 per dozen. C. F. Alexander, Campbell, Cal.

FINEST ITALIAN QUEENS. Send for circular and prices. May to November.  
J. W. Romberger, 3113 Locust St., St. Joe, Mo.

TESTED leather-colored queens, \$2.00; after June 1, \$1.50; untested, \$1.00; \$10 per dozen. A. W. Yates, 3 Chapman St., Hartford, Conn.

PLACE your order early to insure prompt service. Tested, \$1.25; untested, \$1.00. Italians and Goldens. John W. Pharr,  
Berclair, Tex.

FOR SALE—Golden untested queen, \$1.00; 6 for \$5.00. For quantities, write me. Satisfaction guaranteed. R. O. Cox,  
Rt. 4, Greenville, Ala.

FOR SALE—200 COLONIES ITALIAN BEES in 10-fr. hives. All worker comb, extracting supers and section-holders. J. B. Merwin,  
Prattville, N. Y.

PHELPS' Golden Italian Bees are hustlers

VIGOROUS prolific Italian queens \$1.00; 6, \$5.00, June 1st. My circular gives best methods of introduction. A. V. Small,  
2303 Agency Road, St. Joseph, Mo.

FOR SALE—7500 pounds of bees in combless packages, starting April 1, 1917. Better write us before it is too late to have your order booked. Marchant Bros.,  
Union Springs, Ala.

MY BRIGHT Italian queens will be ready to ship after April 1st at 60c each. Send for price list. Safe arrival and satisfaction guaranteed. M. Bates, Rt. 4, Greenville, Ala.

FOR SALE—Bright Italian queens at 75c each; \$7.50 per doz. Ready April 15. Safe arrival and satisfaction guaranteed. T. J. Talley, Rt. 3, Greenville, Ala.

TRY my very best Caucasian-Italian tested queens at \$1.00 each. Hybrids at 25c each. Peter Schaffhauser, Havelock, N. C.

GOLDEN ITALIAN QUEENS, no better honey gatherers anywhere at any price. Untested, \$1.00. Tested, \$2.00. Wallace R. Beaver,  
Lincoln, Ill.

ITALIAN QUEENS from the E. E. Mott's strain of bees. Unt., 90c each; \$9.00 per doz. Safe delivery guaranteed.

Earl E. Mott, Glenwood, Mich.

I AM now booking orders for my 3-banded Italian queens, for delivery after May 20. One untested, 75c; 6, \$4.25; 12, \$8.00. Tested queens, \$1.50. Robt. B. Spicer, Wharton, N. J.

FOR SALE—1000 lbs. of bees in 2-lb. packages. 1 to 40 2-lbs. bees in package, \$2.25 each; 50 to 500 2-lbs. bees in package, \$2.12½ each. Untested Italian queens, 75c extra. H. E. Graham, Gause, Tex.

RHODE ISLAND Queens, Italian, Carniolan, Caucasian and Banats. Tested in May, \$2.00. Untested, \$1.50. Full colonies and bees by the pound. Send for circular. Edwin Tuttle, Woonsocket, R. I.

QUEENS OF QUALITY—Select 3-band leather colored Italians, bred for honey production. Untested queens, 75c each; six, \$4.25; 12, \$8.00. Circular free.

J. I. Banks, Dowlstown, Tenn.

HEAD your colonies with some of our vigorous young three banded Italian queens. Untested, June 1, \$1.00; per doz., \$6.00; nuclei and full colonies. Satisfaction guaranteed. A. E. Crandall & Son, Berlin, Conn.

GOLDENS that are true to name. Write for testimonials; one race only. Unt., each, 75c; 6, \$4.25; 12, \$8.25; 50, \$32.50; 100, \$60. Tested, \$1.50. Sel. test, \$2.00. Breeders, \$5.00 and \$10. Garden City Apiaries, San Jose, Calif.

QUEENS—3-banded Italians. Bred strictly for business. Untested, 60c. Tested, \$1.00. Safe arrival and satisfaction guaranteed or money refunded. Sinking Creek Apiaries, Gimlet, Ky.

FOR SALE—A fine apiary of 95 colonies, together with all fixtures. Good location for honey. Never had a failure. Reason for selling, death of wife. For further particulars, address H. C. Gadberry, Miami, Mo.

FOR SALE—2-fr. nuclei 3-band Italians with queen, \$2.25; 1-lb. bees with queen, \$1.65. Hoffman frames wire and foundation at catalog prices. J. B. Marshall & Son,  
Rosedale Apiaries, Big Bend, La.

LEATHER colored 3-band Italian bees, \$1.25 per pound. Tested queens, \$1.00; untested, 75c each; 2-fr. nuclei, \$2.00. Delivery after April 15. C. H. Cobb, Belleville, Ark.

WELL BRED 3-banded Italian queens' Prices for June, one \$1.00; 6 for \$5.00. Tested, \$1.25; 6 for \$7.00. Write for circular. Nuclei and full colonies ready now. J. F. Diemer, Rt. 3, Liberty, Mo.

TO INQUIRERS:—I sell no queens directly but have an arrangement with the Stover Apiaries, Starkville, Miss., which I keep supplied with best breeders, and they can supply you with my stock. C. C. Miller, Marengo, Ill.

GOLDEN Italian Queens by June 1st. Untested, 75c; or six for \$4.25; doz., \$8.00. Select untested, \$1.00. Tested, \$1.25; six for \$7.00. Breeders, \$5.00. Pure mating guaranteed. Send for circular. J. I. Danielson,  
Fairfield, Iowa.

MY BRIGHT Italian queens will be ready to ship April 1 at 75c each; virgin queens, 30c each. Send for price list of queens. Bees by the pound. Safe arrival and satisfaction guaranteed. W. W. Talley,  
Rt. 4, Greenville, Ala.

SWARTS' Golden Queens of quality; produce bees that are not surpassed by any bees, in any way, anywhere. Satisfaction guaranteed. Mated, \$1.00. Select, \$1.25; 6 for \$5.00. Tested, \$1.75. Select, \$2.00. D. L. Swarts, Rt. 2, Lancaster, Ohio.

FINE ITALIAN QUEENS—Can furnish select stock at the following prices: Single queen, \$1.00 each; 2 queens, \$1.75; 3 queens, \$2.50; 12 queens, \$9.00. Six or more at dozen rates. No disease. Safe arrival. Can begin filling orders about May 15. Give me a trial. Chas. M. Darrow, Star Rt., Milo, Mo.



**GOLDEN QUEENS** that produce Golden Workers of the brightest kind. I will challenge the world on my Golden and their honey-getting qualities. Price, \$1.00 each; Tested, \$2.00; Breeders, \$5.00 and \$10.00.  
2Att J. B. Brockwell, Barnetts, Va.

**GOLDEN ITALIAN QUEENS** from a breeder that was 1st premium winner at Ill. State Fair in 1916. Untested, 75c; six for \$4.25; 12 for \$8.00. Select untested, one, \$1.00; 6, \$5.00; 12, \$9.00. Tested, \$1.50; 6, \$8.00.  
A O. Heinzel, Rt. 3, Lincoln, Ill.

**BUSINESS FIRST QUEENS**—three-banded Italians. Select untested, \$1.00 each. Your queen sent by return mail or your money back. I will send each one ordering from me a plan for preventing swarming if you desire. No disease. Send for price list.  
M. F. Perry, Bradentown, Fla.

**QUEENS**—1-year Root cheap. Best select tested, 90c; average, 70c; medium, 50c. Two Root breeders, 2 yr. old, \$2.50 each. Moore queens, young, from another yard, untested, 75c; doz., \$8.00. Tested, \$1.00; doz., \$10. Book orders now for May 20 delivery. Safe arrival and satisfaction guaranteed.  
J. C. Robbins, Jr., Mesilla Park, N. Mex.

**GOOD ITALIAN QUEENS**—Tested, \$1.00; untested, 75c. One-pound packages with untested queen, \$2.25; 2-lb. package, \$3.25. One-pound package with tested queen, \$2.50; 2-lb. package, \$3.50. Nuclei with untested queen, 2-frame, \$3.25; 3-frame, \$4.00. With tested queen, 2-frame, \$3.50; 3-frame, \$4.25. We can please you.  
G. W. Moon  
1004 Park Ave., Little Rock, Ark.

**GOLDEN Italian queens**; northern breed; new methods. Our standard, size and honey producing qualities. Write for circular and price list.  
H. M. Leach & Sons, Hiram, Ohio.

**GOLDEN ITALIAN Queens** about May 1, that produce golden bees. Good honey gatherers. No foulbrood. Select tested, \$1.25. Tested, \$1.00. Untested, 75c; 6, \$4.25; 12, \$8.00. No nuclei or bees for sale.  
D. T. Gaster, Rt. 2, Randleman, N. C.

**PHELPS' Golden Italian Queens** combine the qualities you want. They are great honey gatherers, beautiful and gentle. Mated, \$1.00; six, \$5.00; Tested, \$3.00; Breeders, \$5.00 and \$10. C. W. Phelps & Son,  
3 Wilcox St., Binghamton, N. Y.

**GOLDEN ITALIAN queens** of the quality you need. Bred strictly to produce Golden bees that get the honey. One, 75c; 6, \$4.25; 12, \$8.25; 50 or more, 60c each. Prompt delivery and satisfaction guaranteed.  
L. J. Pfeiffer, Rt. A, Bx. 210, Los Gatos, Calif.

I AM Now prepared to supply you with Golden 3-banded and Carniolan queens. Give me a trial and be pleased. Tested, each, \$1.00; 12 or more, 85c each. Untested, 75c each; 12 or more, 65c each. Ten percent discount on orders booked 30 days before shipment. No credit; no c. o. d. shipments.  
I. N. Bankston, Eagle Ford, Tex.

**GOLDEN ITALIAN QUEENS** bred strictly for business, that produce a strong race of bees as honey gatherers. By April 1, untested, 75c each; 6 for \$4.25; 12, \$8.00; 100, \$60. Tested, \$1.50. Safe arrival, prompt delivery and satisfaction guaranteed.  
L. J. Dunn, 50 Broadway Ave., San Jose, Cal.

**GOLDEN 3 BAND Italian and Carniolan queens**: Virgin, one, 50c; 6, \$2.50; 12, \$4.00; 100, \$25. Untested, one, 75c; 6, \$4.20; 12, \$7.80; 100, \$60. Select untested, one, 85c; 6, \$4.80; 12, \$7.00; 100, \$70. Tested, one, \$1.00; 6, \$5.40; 12, \$10.20; 100, \$100. Breeders, \$3.00 each. Bees in packages without combs: 1/2-lb., 75c; 1-lb., \$1.25; 2-lb., \$2.25. Nuclei, 1-frame, \$1.25; 2 frames, \$2.25; 3 frames, \$3.00. Add price of queens wanted. We guarantee safe arrival and no disease.  
C. B. Bankston, Buffalo, Tex.

**GRAY CAUCASIANS**, an exceptionally vigorous, prolific, long lived race. Early breeders, gentle, and best of honey gatherers. Untested queens, \$1.50. Select unit, \$2.00. Tested, \$3.00. Select tested, \$3.50. After June 20th, untested, \$1.00. Select unit, \$1.25. Tested, \$2.00. Select tested, \$2.50. Improved northern bred Italian queens as good as the best at same prices. If you desire Caucasian queens, please let me book your order early. Ask for circular. F. L. Barber, The Queen Breeder, Lowville, Lewis Co., N. Y.

**LEGAL NOTICE**—The Texas Honey Producers' Association, with main office at San Antonio, Tex., hereby gives notice of the organization as a limited partnership. It is organized with the intention of incorporation under the laws of the State of Texas for the business of purchase and sale of honey, beekeepers' supplies, cans and appliances used in the production and sale of apary products. The liability of any member may be learned upon application to E. G. Le-Stourgeon, Secretary, P. O. Box 1048, San Antonio, Tex.

**FOR SALE**—Three-band Italian bees and queens. Our bees and queens last year gave general satisfaction, and this year we are in position to give stronger nuclei with a greater percent of brood than we did last year. If it is a bargain you are looking for send your order this way. We are now shipping bees and queens daily. Bees are in all standard hives, Hoffman frames wired and full sheets of foundation. We guarantee bees to be free from disease.

Bees without queen: Three-frame nuclei, \$2.25; 2-frame nuclei, \$1.75; 1-frame nuclei, \$1.25. Three-lb. bees, \$3.25; 2-lb. bees, \$2.25; 1-lb., \$1.50. 3-band Italian queen, untested, 75c. Tested, \$1.00. If queen is wanted, add price of queen.  
The Hyde Bee Co., Floresville, Tex.

**FOR SALE**—Famous Root's, Moore's, Davis', Geo. B. Hows' strain of Italian 3-band bees.  
March 21, 1917.

H. B. MURRAY, Esq., Liberty, N. C.  
*Dear Sir:*—In 1914 I purchased two untested Italian queens of you. One was introduced to a full swarm which did fairly well, and the other was introduced to a small nucleus. The one which was introduced into the nucleus developed into an extra large swarm, and I gave it another 10-frame hive-body in July and sent it to Glendale. I did not visit it until after the honey flow and was surprised to find that the entire 20 frames were practically full of honey. In the spring of 1915 I brought the queen home, and although I had an imported queen in the yard have used your queen as a breeder, and now hundreds of her daughters are scattered through New England.

This strain of bees are vigorous, extremely gentle, evenly marked, fine honey gatherers, and cap their honey very white, and are the best all around bees I have ever seen. I shall want a dozen untested queens of this strain May 1.

Truly yours,  
EDWIN F. TUTTLE.

I have hundreds of recommendations of my strain of bees.  
H. B. MURRAY.

Price before July 1: Untested queen, 1, 75c; 6, \$4.00; 12, \$8.00. Select untested, 1, \$1.00; 6, \$4.50; 12, \$8.50. Tested, 1, \$1.25; 6, \$6.00; 12, \$10. Select tested, 1, \$1.50; 6, \$8.00; 12, \$13. Extra select tested, 1, \$2.00; 6, \$10; 12, \$15. 1/2-lb. bees with queen, 1, \$2.00; 6, \$10; 12, \$16. 1-lb. bees with queen, 1, \$2.50; 6, \$12; 12, \$20. After July 1: Untested queen, 1, 70c; 6, \$3.25; 12, \$6.50. Select untested, 1, 80c; 6, \$3.75; 12, \$7.00. Tested, 1, \$1.25; 6, \$5.00; 12, \$9.00. Select tested, 1, \$1.50; 6, \$6.00; 12, \$10. Extra select tested, 1, \$2.00; 6, \$8.00; 12, \$13. 1/2-lb. bees with queen, 1, \$1.75; 6, \$8.00; 12, \$14.00. 1-lb. bees with queen, 1, \$2.00; 6, \$10; 12, \$17.  
H. B. MURRAY, Liberty, N. C.

## HONEY AND BEESWAX

**FOR SALE**—White clover comb honey, No. 1 and fancy.  
W. L. Ritter, Genoa, Ill.

**WANTED**—Comb, extracted honey, and beeswax.  
R. A. Burnett & Co.,  
6A12t 173 S. Water St., Chicago, Ill.

**WANTED**—Beeswax at all times in any quantity, for cash or in exchange for supplies.  
Dadant & Sons, Hamilton, Ill.

**WANTED TO BUY** a quantity of dark and amber honey for baking purposes.  
A. G. Woodman Co., Grand Rapids, Mich.

**FOR SALE** to the highest bidder a limited quantity of Michigan's best white extracted honey, in 60-pound tins.  
A. G. Woodman, Co., Grand Rapids, Mich.

**COMB HONEY** our specialty. Highest market prices obtained. Consignments of Extracted Honey also solicited.  
Albert Hurt & Co., New Orleans, La.

**HONEY WANTED**—Extracted, white, light amber and amber of good quality. Can use several cars. Send samples and prices.  
Wesley Foster, Boulder, Colo.

**FOR SALE**—200 cases white clover comb honey. It is mostly fancy stock, and is cased in 24 section shipping cases. Interested parties address  
Bell E. Berryman,  
Central City, Nebr.

**WANTED**—Extracted white clover and light amber honey. Will buy in lots of 1000 pounds to a carload. I pay cash. State what you have and send sample with lowest price. Write. M. E. Eggers, Rt. 1, Eau Claire, Wis.

**WANTED**—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5c a pound for wax rendered.  
The Fred W. Muth Co.,  
204 Walnut St., Cincinnati, Ohio.

**HONEY WANTED**—We are in the market for white and light amber grades of honey, also off grades which are suitable for baking. If you have such honey to offer, please send us sample, state the quantity you have, how packed and your lowest price for same.  
Dadant & Sons, Hamilton, Ill.

**FOR SALE**—260 L. frames of drawn combs, wired, hives, extractor, etc. No disease.  
P. H. Dunn, Akron, Iowa.

**NORTHWESTERN BEEKEEPERS!** Save time and freight by ordering supplies (at catalog prices) near home. Geo. F. Webster,  
Valley View Farm, Sioux Falls, S. Dak.

**FOR SALE**—Cedar or pine dovetailed hives, also full line of supplies including Dadant's foundation. Write for catalog.  
A. E. Burdick, Sunnyside, Wash.

**WANTED**—Wax and old combs for cash or to make up on shares. "Best quality" foundation made and sold cheap in small lots.  
J. J. Angus, Grand Haven, Mich.

**BEE-KEEPER**, let us send our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. White Mfg. Co.,  
4Att Paris, Tex.

## SUPPLIES.

**WANTED**—A small extractor in good condition.  
Wesley Koch, Kingsley, Mich.

**FOR SALE**—260 L. frames of drawn combs, well wired, hives, extractor, etc. No disease.  
P. H. Dunn, Akron, Iowa.

**FIFTEEN PERCENT** discount on med. brood foundation, Hoffman frame hive-bodies.  
E. Decock, Medford, Wis.

**FOR SALE**—100 comb honey supers; all painted white; about half dovetailed; the rest hand made. All in first-class shape. 25 to 30 cents apiece, if sold at once. Address,  
James D. Benson, Rt. 2, Juda, Wis.

**FOR SALE**—Fifty 8-frame hives; used but in good condition; painted; complete with frames; no combs, with Higginsville cover and reversible bottom, at \$1.00 each or \$45.00 for the lot.  
The M. C. Silsbee Co.,  
Cohocton, Rt. 3, N. Y.

## SITUATIONS.

**WANTED**—Industrious young man, fast worker, and of clean mental and body habits, as a student helper in our large bee business for 1917 season. Will give results of long experience, and board and small wages. Give age, weight, experience, and wages in first letter.  
W. A. Latshaw Co., Clarion, Mich.

## HONEY LABELS

**HONEY LABELS** of the better sort. Not only the most attractive but also the lowest in price. Send today for free samples.  
Liberty Pub. Co., Sta. D, Box 4H, Cleveland, O.

**HONEY LABELS**—We have just issued a new and up-to-date catalog of honey labels and stationery. Write for your copy. Neat labels and quick delivery guaranteed.  
American Bee Journal, Hamilton, Ill.

**WANTED**

**WANTED**—75 or 100 colonies of bees; 10-fr. hives; wired frames. Price reasonable. P. O. Box 596 "U" Farm, St. Paul, Minn.

**WANTED**—Your old combs, cappings or slumgum to render into beeswax by our high steam pressure wax presses. Dadant & Sons, Hamilton, Ill.

**MISCELLANEOUS**

25 LADIES' COOTS, bird dogs, wild ducks for sale or exchange for bees. A. J. Graves, Ocheyedan, Iowa.

**FOR TRADE**—One \$21 post card camera and outfit to exchange for a second-hand extractor. Write J. L. Barkley, Lometa, Tex.

**FOR SALE**—10 a. home; 4 a. in blue grass pasture; 4 a. in alfalfa; 2 a. in garden and orchard; 12 varieties of fruit; watered by 3 springs and creek; 4-roomed house and out-buildings; ½ mi. to school; 1 mi. to R. R. station; electric lights and telephone; \$2800. Terms easy; 100 col. bees also for sale. Jes Dalton, R. R. 1, Cove, Oregon.

**FOR SALE**—Oak Ridge Apiary, consisting of 150 colonies of bees, house, barn, work shop, cement chicken house, with 5½ acres of land and bearing fruit. Situated 2½ miles from town with two, R. R., one a division point. 20 miles from a city of 80,000 inhabitants. Address, Box A 12, R. F. D. 3, Chillicothe, Ill.

**CASH**

paid for butterflies, insects. Some \$1 to \$7 each. Easy work. Even two boys earned good money with mother's help and my pictures, descriptions, price list, and simple instructions, no painful killing, etc. Send 2c stamp at once for prospectus. SINCLAIR, Box 244, D 41, Los Angeles, Cal.

**Statement of Ownership, Management, Circulation, Etc.,**

of the American Bee Journal, published monthly at Hamilton, Illinois.

Editor—C. P. Dadant.

Managing Editor—M. G. Dadant.

Owner—C. P. Dadant, Hamilton, Ill.

Known bondholders, mortgagees, and other security holders holding one percent or more of total amount of bonds, mortgages or securities—None.

[Signed] M. G. DADANT, Manager. Sworn to and subscribed before me this 14th day of April, 1917.

[SEAL.]

R. R. WALLACE.

Notary Public.

My Commission expires Sept. 22, 1917

## Crop Reports and Market Conditions

### CROP AND MARKET REPORT.

For our May reports we sent out the following questions:

1. How much winter losses?
2. Crop and plant prospects?
3. How is the honey crop, so far?
4. Has any honey of 1917 crop been sold ahead, and at what price?
5. What is being offered in carloads for fall delivery of honey?
6. What prices would you suggest in car lots for honey, comb, extracted, and bulk comb?

#### WINTER LOSSES

The following is a summary taken from the reports coming in: Losses in the whole northeastern part of the country and as far west as the Missouri river have been about normal, varying from as high as 50% with the beginner down to 2% with the veteran, with probably an average loss of 6 to 10%. Losses have also been normal throughout the south, with some large losses from certain Louisiana and Oklahoma districts. The weather there has been exceedingly backward, however, and spring losses from starvation are large. The average loss will be probably 10%.

In the west, the winter has been exceedingly severe and losses run higher than common, Utah reporting 40 to 60% loss, and this from experienced producers. Idaho losses range from 10 to 30% generally, with about the same for Washington. Colorado reports 10 to 15% loss, with one producer reporting 50%.

#### CROP PROSPECTS

Except for spotted districts, the white clover prospects of the north and east are good. Some parts of Illinois, Iowa, Nebraska and the Dakotas, report the clover practically all killed. Minnesota, Wisconsin, Michigan and the east had even better prospects than last year. Other sections are probably 60 to 85% of normal to a little above normal conditions.

In the southeast, the only places reporting normal conditions are Georgia and parts of Florida. The balance of the section is backward, with the anticipation that the crop will not range much over 50% of normal. In Texas and Louisiana it is extremely dry, bees are still starving and the crop will run very low, being estimated by different producers in scattered sections at from 10 to 50% of a normal crop.

Conditions of plants in the northwest are about normal, and probably a little lower than normal in California, owing to a backward spring, and extremely cool weather which still continues.

#### THE HONEY CROP

All early honey-producing plants in Texas have failed. Louisiana is the same. In fact, the whole South is, except that there is a good flow now on from tithi in Georgia. It is yielding some surplus.

### HONEY SOLD IN ADVANCE

There are no reports of advance sales in the East or South, except that in Texas some sales have been made in advance in a small way at 12c for extracted and 14c for bulk comb. One Michigan and one Wisconsin reporter state that they have sold their entire crop of extracted clover at 8c f. o. b. their station.

Practically no advance sales have been made in the west, but in California, probably 25% of the extracted honey has been contracted for at prices ranging from 6½c to 7½c for amber and 7½c to 9c for white, f. o. b. shipping point.

#### OFFERS FROM BUYERS

Buyers are very active. Many producers have refused 8c for white extracted and 7c for amber. Some offers have been made for orange extracted, soon to be harvested, at 9½c, f. o. b. shipping point. Many offers have been made in California of 7 or 7½c for all the crop of a beekeeper—amber and white. One party reported that buyers were endeavoring to contract at almost any price to get the honey. The above is not true of comb, very little being offered on.

It is reported that the British government attempted to contract for 5,000 barrels of honey in San Antonio at prices ranging from 7c to 11c per pound, according to grade. One New York buyer reports an order from a British firm which he is attempting to fill at their prices.

#### SUGGESTIONS FOR CAR LOT PRICES

Almost all kinds of prices were suggested by reporters, from as low as 7c for amber extracted to as high as \$4.50 per case for comb in car lots. The consensus of opinion is that extracted white honey should command a price of not less than 10c f. o. b. shipping point in car lots, with 1½ to 2½c less for amber, depending upon grade. The favorite prices for comb in car lots seem to be \$3.25 to \$3.75 per case.

We are passing through an unusual period at present. The war, the demand from abroad, the increased demand of large bottlers, and the increased local sales of honey are bound to elevate the price.

If contracts are ahead they should be made with as full a comprehension as possible of existing conditions and at a price absolutely satisfactory to the beekeeper.

One point which we would emphasize among beekeepers is that there should be some distinction between the retail and wholesale prices. That is, a beekeeper should not get the same price for ten pounds of honey as for ten thousand. If he tries to do this he is bound to suffer from needlessly low prices when he tries to sell his honey in large lots to others who are selling again.

But remember, that though we as beekeepers want to get our proportionate share of increased prices, we as patriotic citizens must, above all, follow the suggestions in the President's message and exert ourselves to the utmost to increase the crop of honey from our bees. Leave no stone unturned to increase the yield, not only from our bees, but from every foot of available land.



## HONEY AND BEESWAX

CHICAGO, April 17.—There is not much change in the market since our last quotations. Extracted honey is still in demand, with the white selling at 10¢ per pound; ambers 8¢ per pound. Comb honey for which there is very little demand, 14¢ per pound. Beeswax if clean 33¢ per lb. R. A. BURNETT & CO.

KANSAS CITY, Mo., April 16.—The market on honey is very firm at \$2.75 for No. 1, and we believe that something fine would bring a little more. Extracted honey is cleaning up and there is very little here. The market ranges from 8¢ to 12¢, according to the quality and kind of honey. Beeswax is worth from 30¢ to 33¢ a pound, according to quality. C. C. CLEMONS PRODUCE COMPANY.

CHICAGO, April 17.—Our honey market is a little more active. Our market is cleaning up pretty well. We have handled over eight cars this year, and we are sold down to less than a hundred cases today. In fact, we are in the market for honey.

We are also pretty well cleaned up on extracted honey. We are selling this at 10¢ to 12¢ per pound. We look to see honey clean up high for the balance of the season. Of

course, it is getting late and it ought to be sold.

The comb honey last year had a very poor wind up. Honey did not clean up and some was carried over last year, although we always clean up, and make it a point to do this by the first of May. We give credit partly to ourselves this year for the active aggressive campaign we adapted in keeping the honey before the public and pushing it in every way possible. While we only handled eight cars this year, probably next year we will handle twelve or fifteen cars both comb and extracted honey.

The market on beeswax remains unchanged, from 30¢ to 35¢, according to color and quality. COYNE BROTHERS.

NEW YORK, April 17.—All grades of comb honey are well cleaned up, with the exception of some odds and ends of poor quality, for which there is no demand to speak of. White honey will bring from 14¢ to 16¢ a pound, according to quality, lower grades from 11¢ to 13¢.

Extracted honey is also well cleaned up and very little stock available at this time. As to the conditions of the market in general, in comparison with last year at this time, prices are ruling considerably higher and supplies are much less.

Beeswax is in good demand, and prices rule from 40¢ to 42¢ a pound, according to quality. HILDRETH & SEGELKEN.

SAN ANTONIO, April 16.—The market is practically bare of honey—both comb and extracted. Owing to the extreme drouth early honey flows have been cut off or delayed and no honey will be shipped from Texas for some weeks. Prices ranging from 8¢ to 10¢ for extracted, and 10¢ to 12¢ for bulk comb are being offered for new honey, but little, if any, is being contracted for. Beeswax is firm and in strong demand. Local prices 30¢ to 32¢ per pound.

SOUTHWESTERN BEE CO.

DENVER, Colo., April 16.—With the exception of a small lot of extra fancy white comb honey we are entirely cleaned up. Our supply of extracted is only sufficient for our local requirements.

Demand for extracted in carlot continues strong. There is also a fair demand for comb honey in carlot, which is unusual this late in the season. We are quoting the following jobbing prices: Extra fancy comb honey, per case, \$4.15. Fancy, out of stock. No. 1, out of stock. No. 2, out of stock.

THE COLO. HONEY PRODUCERS' ASS'N.  
F. Rauchfuss, Mgr.

## MOTT'S NORTHERN-BRED ITALIAN QUEENS

that resist disease well. Those that resist disease must be hardy, prolific, and hustlers; they are gentle. Bees per pound. Plans on "How to Introduce Queens and Increase," 25 cents. List free.

E. E. MOTT, Glenwood, Mich.

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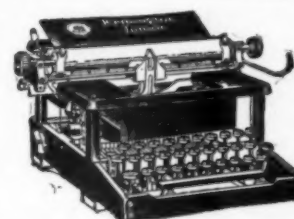
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Read a few reports of big yields from single colonies of this gentle strain of Golden: H. E. Bartz, Keytesville, Mo., 264 pounds of extracted honey; J. M. Buchanan, Franklin, Tenn., 250 pounds of extracted honey; L. C. McCarty, Nampa, Idaho, 250 pounds of comb honey; Fred Dury, Unionville, Mo., 374 pounds of comb and extracted honey.

I guarantee safe arrival (U. S. and Canada), purity of mating and satisfaction. Write for circular.

## —Prices of Queens—

	Nov. 1 to May 1			May 1 to June 1			June 1 to July 1			July 1 to Nov. 1		
	1	6	12	1	6	12	1	6	12	1	6	12
Untested	\$1.50	\$ 7.50	\$13.50	\$1.25	\$ 6.50	\$11.50	\$1.00	\$ 5.00	\$ 9.00	\$ .75	\$ 4.00	\$ 7.50
Select untested	2.00	8.50	15.00	1.50	7.50	13.50	1.25	6.50	12.00	1.00	5.00	9.00
Tested	2.50	13.50	25.00	2.00	10.50	18.50	1.75	9.00	17.00	1.50	8.00	15.00
Select tested	3.00	16.50	30.00	2.75	15.00	27.00	2.50	13.50	25.00	2.00	10.00	18.00

Select queen tested for breeding, \$5.00.

The very best queen tested for breeding, \$10.00

**BEN G. DAVIS, Spring Hill, Tennessee**

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15 LBS.  
SURPLUS

Which Colony is Yours, Mr. Beekeeper?

150 LBS.  
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One that will keep the hive chock-full of bees at all times, make the biggest yields of honey, stingless, and look the prettiest at a medium price. Over 25 years of select breeding has brought our queens up to a standard surpassed by none and superior of many. We have tried the principal races and every method known, and we have now selected the best of both. THE DOOLITTLE METHOD and the THREE-BAND BEES. Use the 3 Bands. Why? Because they get results. The foremost bee-men of the world use them. Our queens are sold by many of the largest dealers in the United States.

Louis H. Scholl (one of the largest beekeepers of the Southwest) says: "Three-band Italians have proven the best all-round purpose bee after trying out nearly every race, not only in an experimental way while still at A. M. College, but in our own apiaries as well."—(In Beekeepers' Item.)

Untested.....	\$ .75	\$ 4.25	\$ 8.00	Tested.....	\$1.50	\$ 8.75	\$17.00
Select untested.....	1.00	4.75	9.00	Select tested.....	2.00	11.00	20.00

Write for circular giving general description. Mail all orders to

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### \$2<sup>50</sup> A Month Buys L. C. Smith

Perfect machines only of standard size with keyboard of standard universal arrangement—has Backspacer—Tabulator—two color ribbon—Ball Bearing construction—every operating convenience. **Five Days' Free Trial.** Fully guaranteed. Catalog and special price free. **H. A. SMITH, 314-231 North Fifth Avenue, Chicago, Illinois**

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Capacity of my yards over 1000 Queens a month

After 20 years of careful selection and breeding, I now have a strain of bees that cannot be excelled by any. My queens are all bred from IMPORTED STOCK, the very best in the world for honey gathering and gentleness. They are not given to swarming. What more do you want in bees than the three above qualities?

### G U A R A N T E E

You take no risk in buying my queens, for I guarantee every queen to reach you in first-class condition, to be purely mated and to give perfect satisfaction. All queens that do not give satisfaction I will replace. Send for circular.

	PRICES APRIL 1ST JULY 1ST		
	1	6	12
Untested.....	\$ .75	\$ 4.25	\$ 8.00
Select untested.....	.90	5.00	9.00
Tested.....	1.25	7.00	13.00
Select tested.....	2.00	11.00	20.00

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## EVERY BEEKEEPER KNOWS

The worth of a good queen, the worth of a good strain of bees- and also knows how worthless is a poor queen and inferior bees. Try our strain of three-band Italians; they will not disappoint you. Vigorous, prolific queens; bees that get the honey. Another thing, no disease in this locality. Tested queens of last fall rearing by return mail. \$1.00 each. Untested queens, single queen, \$1.00; \$5.00 per dozen.

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Early breeders; great honey gatherers; cap beautifully white, great comb builders; very prolific; gentle; hardy; good winterers. Untested, \$1.00. Select untested, \$1.25. Tested, \$1.50. Select Tested, \$2.00. The best all-purpose bee.

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Golden and 3-Banded Italians and Carniolans, fine workers. Queens, 75 cts. each; \$8.00 per doz. Bees in pound packages, \$1.25; 2-lb. pack, \$2.25.

Your satisfaction my object.

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## 3-BANDED ITALIANS



From May 1 until June 1  
Untested, \$1.00; 6, \$4.50; 12, \$8.00. Tested, \$1.25; 6, \$5.50; 12, \$10.50

From June 1 until Nov. 1  
Untested, 75c; 6, \$4.00; 12, \$7.50. Tested, \$1.00; 6, \$5.00; 12, \$9.00. Select tested \$2.00 each. Circular free.

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723 C St., Corpus Christi, Texas



## QUEENS

Quirin's Improved Superior Italian Bees and Queens. They are Northern bred and hardy. 25 years a Queen Breeder.

PRICES	Before July 1st			After July 1st		
	I	6	12	I	6	12
Select untested.....	\$1.00	\$5.00	\$9.00	\$.75	\$4.00	\$7.00
Tested.....	1.50	8.00	15.00	1.00	5.00	9.00
Select tested.....	2.00	10.00	18.00	1.50	8.00	15.00
2-comb nuclei.....	2.50	14.00	25.00	2.25	12.00	22.00
3-comb nuclei.....	3.50	20.00	35.00	3.25	18.00	32.00
8-frame colonies.....	6.00	30.00		5.00	25.00	
10-frame colonies.....	7.50	38.00		6.00	32.00	
1/2-pound package bees..	1.50	7.00		1.00	5.00	
1-pound package bees...	2.00	10.00		1.50	8.00	

BREEDERS.—The cream selected from our entire stock of outyards; nothing better. These breeders \$5.00 each.

Can furnish bees on Danzenbaker and Langstroth or Hoffman frames.

Above price on bees by pound, nuclei, and colonies does not include queen.

You are to select such queen as you wish with the bees, and add the price.

No bees by pound sent out until first of June. Also nuclei and colonies, if wanted before June 1, add 25 percent to price in table.

Breeders, select tested, and tested queens can be sent out as early as weather will permit. Send for testimonials. Orders booked now.

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A strong colony of Italian bees with a tested Italian queen, in a new 8-frame dovetail hive, complete with super, for \$11.00. Tested Italian queens, \$1.50. Untested, \$1.10.

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Gentlemen:—Will want more of your three-pound packages of bees with queens the coming spring. The two I bought of you last May did all right. One package made 185 sections of honey and gave one swarm, and the other made 206 sections and gave two swarms. I am well pleased.

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1-lb. pkgs. \$1.25 each; 25 to 50 pkgs. \$1.22½ each; 50 to 100 pkgs. \$1.20 each; 2-lb. pkgs. \$2.25 each; 25 to 50 pkgs. \$2.22½ each; 50 to 100 and up, \$2.20 each; 3-lb. pkgs. \$3.25 each; 25 to 50 pkgs. \$3.22½ each; 50 to 100 and up, \$3.20 each.

GOLDEN AND 3-BAND ITALIAN QUEENS READY APRIL 1

Untested.....75 cts. each; \$65.00 per 100 | Tested.....\$1.25 each; \$110.00 per 100

Select untested.....90 cts. | \$75.00 100 | Select tested 1.50 125.00 100

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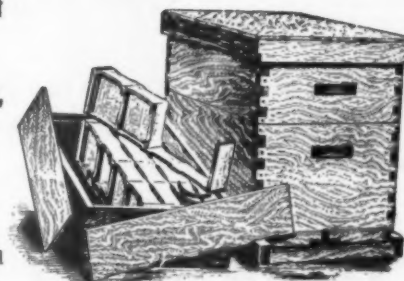
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**VENTILATED BOTTOM**

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